

THE COTTON GIN AND OIL MILL

PRESS

FORMERLY THE COTTON AND COTTON OIL PRESS

NOVEMBER 8, 1952



THE MAGAZINE OF THE COTTON GINNING
AND OILSEED PROCESSING INDUSTRIES



IN THIS ISSUE: Special Cotton Mechanization Conference Reports

Bakersfield • Shafter

Fresno, California

OCT. 22-25, 1952

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ADDRESSES

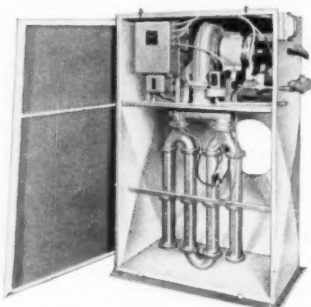
PANEL DISCUSSIONS

PHOTOVIEWS

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PICTURED: Irrigating and fertilizing in one operation in California;
field of cotton in New Mexico; a big California gin plant.

NEW LUMMUS GAS and OIL HEATING UNITS

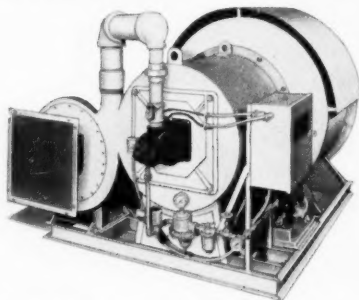


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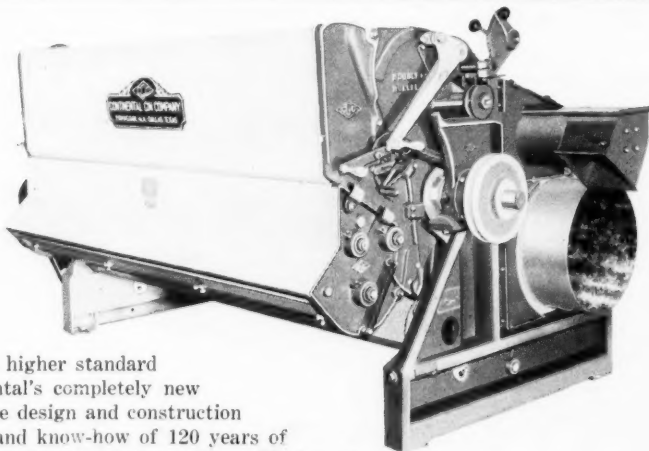
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The "picking fingers" of a mechanical cotton picker are its spindles.

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The Allis-Chalmers Two-Row Cotton Picker harvests cleaner cotton . . . with grades and quality normally comparable to hand picking. There are many more spindles in the picking area — they are long, grooved and barless. They gently wrap up the lint from open bolls with minimum disturbance of leaves, grass, vines and stems. There's less raking action, less staining of lint with mutilated green leaves, less damage to open bolls and less trash in the cotton.

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Yes, there is a difference in Allis-Chalmers machine-picked cotton. You'll see it at the gin.

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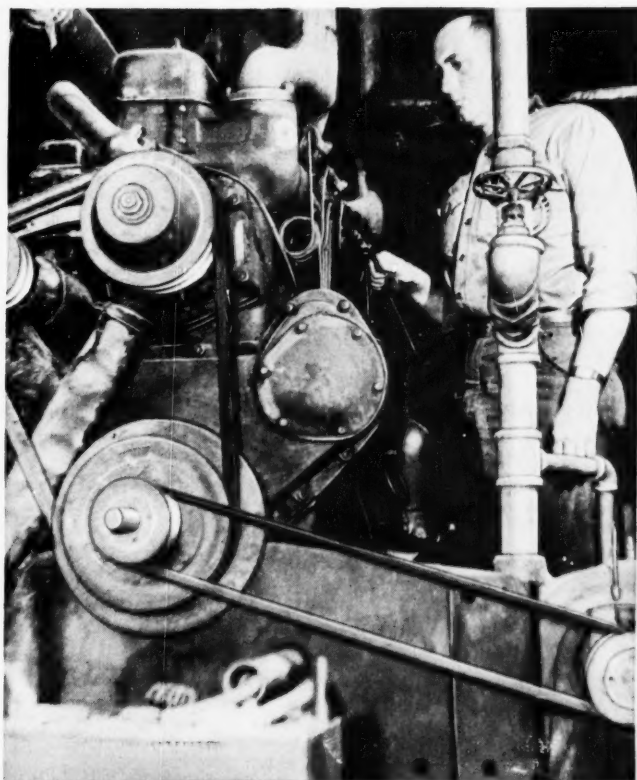
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Last year when a bumper crop kept gins around Opelika, Alabama humming round-the-clock for three months straight, a four-year-old International UD-24 engine in the Torbert gin handled 4,242 bales without a moment's downtime.

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SWIFT & COMPANY

THE COTTON GIN AND OIL MILL PRESS

53rd YEAR

THE MAGAZINE OF THE COTTON GINNING
AND OILSEED PROCESSING INDUSTRIES

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The Cover

NOT ONLY is this issue a special one—the cover is special too. And because the pictures are described on the cover itself, we would like to use this space to say you will find much new thinking about cotton mechanization in the special material between these covers. Ginners and cottonseed crushers who read the articles are sure to have a much better idea of what may be needed in their own communities to make cotton production more efficient and, as a result, more profitable.



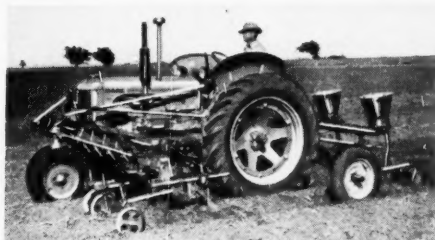
A PROGRESSIVE AND RESPONSIBLE PUBLICATION
READ BY COTTON GINNERS, COTTONSEED CRUSHERS AND OTHER
OILSEED PROCESSORS FROM CALIFORNIA TO THE CAROLINAS

CASE EAGLE HITCH Farming



Cuts Cotton Costs

Save time in the barnyard, make time in the field with Eagle Hitch Implements. With most of them, you can stay right on the tractor seat while you hook up, adjust, unhook—hook up sitting down in a minute or so! Mounted 2-disk plow shown at right on high-clearance low-cost 2-plow "VAH" Tractor does beautiful job whether soil is wet and sticky, baked hard, or in good tilth. Handles huge amounts of heavy trash. Rolls undamaged over stumps and stones. Fits all three sizes of Case Eagle Hitch Tractors.



Do two jobs at once! Save time and money! Plant 4 rows of cotton with Eagle Hitch Buster planter . . . at the same time do a thorough job of weed-killing with 4-row cultivator mounted directly ahead of planter. Gives cotton a big head start over weeds. Fast 3-plow Case "DC" Tractor has power and traction aplenty for this double duty. Can be factory equipped for LPG fuel.

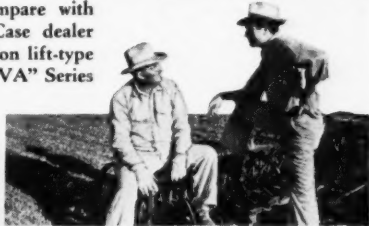


Get rid of tough cotton stalks fast and cheap without wasteful, dangerous burning. Case Stalk and Vine Shredder does a quick, clean job with 2 to 5-plow power on PTO. Also clears land of brush, controls pasture weeds, shreds corn stalks and potato vines, makes mulch of orchard trimmings . . . has dozens of big-paying uses.

A wonderful new way of doing your farm work—that's Eagle Hitch Farming. You'll save work, time, money with this vastly superior new way of mounting, driving, and controlling all manner of new implements and machines. You'll do better work faster and a lot easier than ever before. Visit your Case dealer and get a personal demonstration of Eagle Hitch Farming with new Constant Power Take-Off, Constant Hydraulic Control, and new Self-Energizing Double-Disk Brakes.

Eagle Hitch and Constant Hydraulic Control are standard equipment on 14 models of Case Tractors in 3 power sizes—the fast 3-plow "DC" Tractors, the full 2-plow "SC" models, and the entire low-cost 2-plow "VA" Series. "D" and "S" Series have Self-Energizing Brakes, with Constant Power Take-Off available. Get a demonstration—see your Case dealer.

Sitting on His Case 4-Section Rotary Hoe, Texan J. C. Shropshire tells Case dealer N. P. Kendrick how it helps him cut cotton costs: "Saves half on cultivating, half on hand hoeing. Gets rid of young grass better than anything else—on beds or flat land. Covers 80 to 100 acres a day. Never had anything to compare with it." Ask your Case dealer about the 2-section lift-type rotary hoe for "VA" Series Eagle Hitch.



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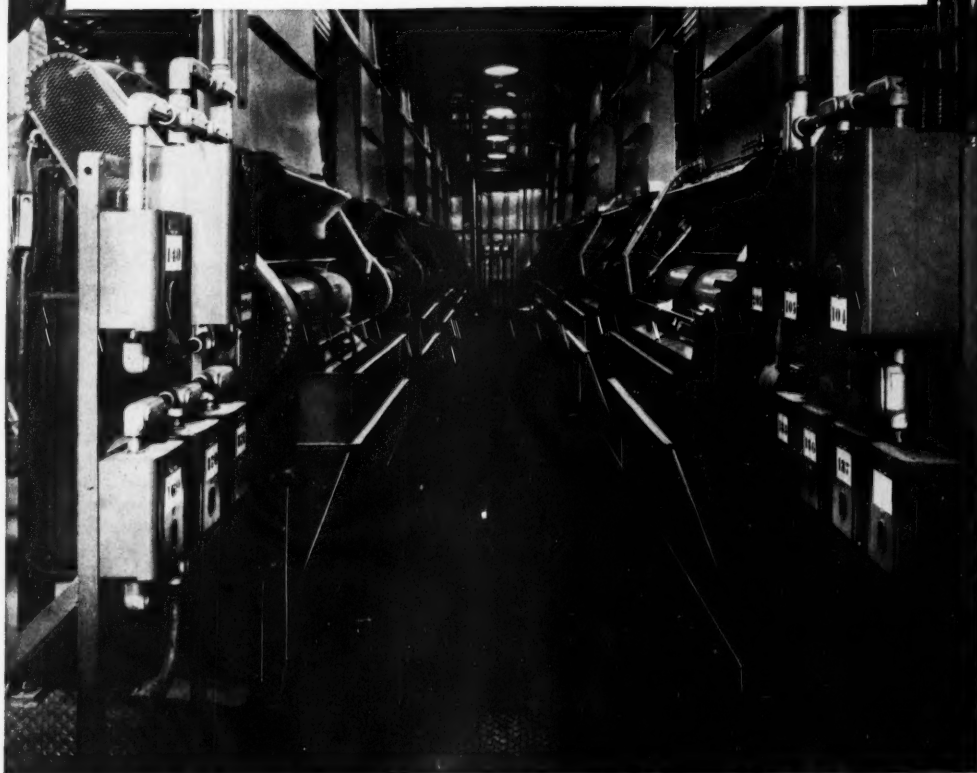
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The Cotton Gin and Oil Mill Press

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Laugh IT OFF

The farmer's young bride from the
city was having a great deal of trouble
making oxtail soup. Every time the wa-
ter got hot, the ox would take his tail
out of the pot.

First Father: "Has your son's college
education proved helpful since you took
him into the firm?"

Second Father: "Oh, yes, whenever we
have a conference we let him mix the
cocktails."

The minister met Tom, the village
ne'er-do-well, and much to the latter's
surprise, shook him heartily by the hand.

"I'm so glad you have turned over a
new leaf, Thomas," said the good man,
"I was delighted to see you at prayer
meeting last night."

"Oh," said Tom. "So that's where I
was!"

"Why is a bustle like a historical
romance?"

"I'll bite."

"Both are fictitious tales, based on
stern reality."

"Now look here, fellow," the Army
doctor snarled at the draftee, "you know
very well you wouldn't come to me in
civilian life with a little thing like this."

"You're darned right I wouldn't,"
drawled the recruit. "I'd send for you."

A man should not go around with a
married woman unless he can go two
rounds with the husband.

An undertaker found a donkey lying
dead in front of his premises, and went
to inform the police. "What will I do
with it?" he asked the officer in charge.
"Do with it? Bury it, of course," said
the officer, laughing. "You're an under-
taker, aren't you?" The undertaker
looked him straight in the eye. "Cer-
tainly I am," he replied, "but I thought
it only right to come around and inform
the relatives first."

Plea of Defendant's Lawyer (who had
murdered his father and mother): "Don't
send this poor orphan to the gallows!"

Betty: "Last night I went to an army
dance and became engaged to the cutest
boy!"

Sally: "How thrilling! What's his
name?"

Betty: "But darling! you can't ask a
personal question like that right off!"

"I feel awfully sad for you, old man.
I tell you it's hard to lose a wife."

"Hard? It's doggone near impossible!"

At mealtime a little girl turned to her
father and asked, "Why can't we just
say grace once a week, Daddy? Why do
we have to ask for our daily bread every
day?"

Her younger brother looking up in dis-
gust, said, "Do you think we want stale
bread?"

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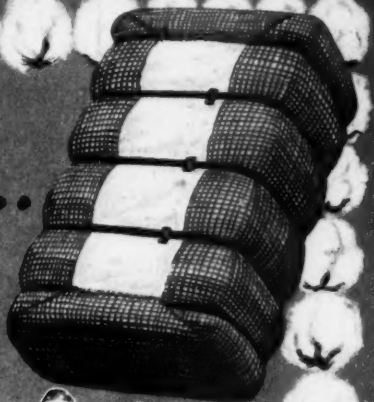
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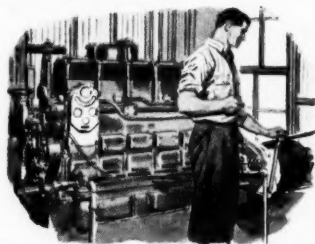
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Textile men have learned to count on Cummins Diesels for dependable power day in, day out.

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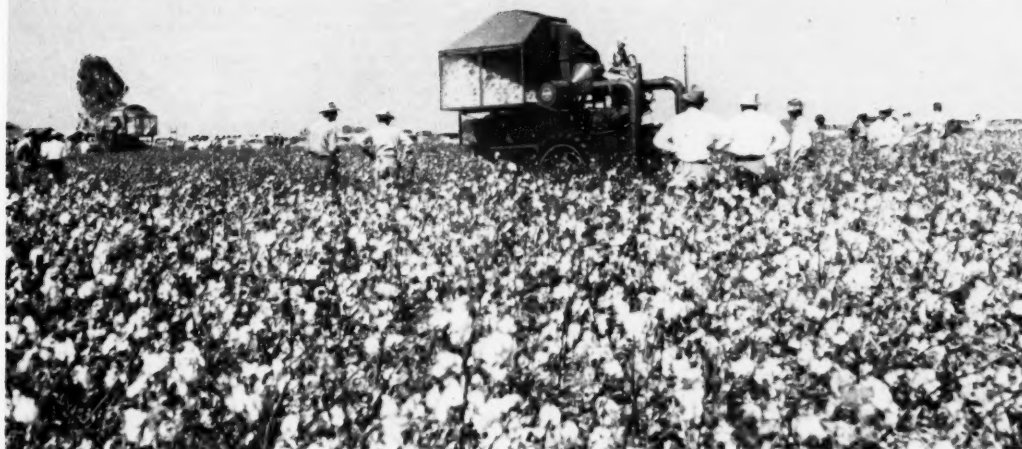
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CG&OMPress Photo

ONE OF THE mechanical pickers used in the demonstration at Shafter on Oct. 23.

Mechanization Conference Report

West Sets the Pace in ADVANCE OF MECHANIZATION

THE SIXTH ANNUAL Beltwide Cotton Mechanization Conference, Oct. 22-25, at Bakersfield-Shafter-Fresno, Calif., demonstrated conclusively that the right combination of good machines and intelligent management is enabling the cotton industry to make rapid strides in the mechanization of the nation's No. 1 crop. At the same time, it is evident that many problems remain to be solved before the goal of complete mechanization can be realized throughout the entire Cotton Belt.

California, a younger partner of the Cotton Belt in this business of growing cotton, provided Conference visitors with an almost breathtaking view of the scope of mechanization which has enabled the state to rise within a few years to second place in volume of cotton production. Out-of-state cotton men were greatly impressed by the methods and machines that are being used, but even more impressed by the efficiency in management which is making it possible for the necessarily large investment per acre to pay off for the irrigated cotton areas of the Far West.

We Can Pick It and Gin It

Any evaluation of progress in cotton mechanization must begin with a tribute to those who have dispelled some of the doubts that loomed large in the minds of many members of the cotton industry at the time when the National Cotton Council and its cooperating agencies began to sponsor these annual conferences.

Teamwork between many individuals

■ **PROGRESS IN MACHINE** picking and ginning excellent, but weed control and defoliation still pose many problems. Sound management is essential for profits from investments in mechanized equipment.

By WALTER B. MOORE

Assistant Editor, The Cotton Gin and Oil Mill Press

and organizations has largely answered questions which seemed almost unanswerable when cotton entered the post-war period after World War II. Granting that many problems within these fields remain to be worked out, we have progressed to the point that few today would question the statements that:

■ **1. We Can Harvest Cotton Mechanically with a High Degree of Efficiency.** The mechanical harvesters that we have today, both pickers and strippers, can do a good job. They are doing a good job for thousands of farmers in many parts of the Cotton Belt. They are harvesting an estimated 65 to 75 percent of the entire crop in California this season, and a good proportion of the total production in many other areas.

Thanks to the combined efforts of implement manufacturers, public and private research and educational agencies and many others throughout the industry, the mechanical harvesting of cotton

which had been a dream for so long is now an established practice that is spreading steadily across the Cotton Belt.

■ **2. We Can Gin Cotton That Is Mechanically Harvested.** Practically everyone can remember the time when many felt that ginning ranked high among the obstacles to the progress of cotton mechanization. There were those who doubted that the ginning industry could or would keep abreast of others in the movement toward mechanization.

Within a few years, this sentiment has been changed by the dramatic improvements that have been made in the ginning of mechanically harvested cotton. Machinery manufacturers have provided efficient equipment for gins. Research and educational agencies have helped to provide the necessary know-how. Gin owners and operators have invested much money, time and study in the handling of cotton through the gin

so that the producer and the buyer would have a better product, however it may be harvested. By doing this, the ginning industry has made a notable contribution to mechanization progress.

As more gins install improved equipment, as manufacturers further refine their machinery, and as training and experience in use of these improvements spread, it seems certain that the ginning of machine harvested cotton will become less and less of a problem in the future.

Leaves and Weeds Still Bother Us

Despite tireless efforts by those concerned with these problems, the farmer's ancient enemies — the weeds — and the leaves on cotton plants still present large obstacles in the pathway toward mechanization. Much progress has been made in the use of machines and chemicals to

control weeds; but the man with a hoe is far from having disappeared from the cotton field. Chemical defoliation of cotton also has advanced a long way; but we continue to find many conditions under which defoliation does not yet come up to the standards which cotton growers and manufacturers of defoliants hope to reach in the future.

■ 1. We Need to Reduce Our Hoe Bill.

Before the mechanization of cotton production can be completed, more must be done to reduce the labor and cost of keeping and weeds and grasses out of cotton. This cost is not limited to the out-of-pocket expense of cutting weeds, but extends also to costly losses of rainfall or irrigation water used by weeds, soil nutrients removed by these robbers and the problems that weeds and grasses present in the harvesting of the crop.

Mechanical and chemical methods are being used more and more to control weeds. Chemical sprays, used before or after the emergence of plants, give good results at times. Flame cultivation works well at certain times, under certain conditions. Rotary hoes do a good job when properly used at the right time. Combinations of two or more of these practices are better than any one method. All of these things represent progress, perhaps as much as we could have hoped to achieve during the time in which they have been used; but it is to be hoped that the future will bring greater efficiency and economy in the control of weeds and grasses in cotton.

■ 2. Defoliation Can Be Improved. Not even the most enthusiastic advocates of chemical defoliation feel that we have approached our ultimate goal in the removal of leaves from the cotton plant. Chemicals do an excellent job under ideal conditions, which include the use of the proper material, at the right time, by the right method. At the same time, there continues to be many cases where the final results are much less satisfactory than under these ideal conditions.

Neither the mechanical harvester nor the cotton gin will be able to do the best possible job until there is widespread, effective defoliation. This a problem that concerns the grower, ginner, merchant and spinner, as well as manufacturers of defoliants and research workers particularly concerned with defoliation.

Other Conference Features

Developments in cotton mechanization are thoroughly covered in the addresses and panel discussions at the Conference which are published throughout this issue of *The Cotton Gin and Oil Mill Press*. Also published elsewhere in the issue is much timely, practical information presented in the field demonstrations at the Shafter Cotton Experiment Station.

Other outstanding features of the Conference included the banquet, Oct. 22, addressed by J. Roger Deas, manager, public information service, Pacific Division, American Can Co., San Francisco; the inspection of facilities for ginning, seed cotton drying and seed delinting at Calolina Farms, owned by W. B. Camp and Sons and Frank Jeppi; the all-day tour Oct. 24 of the San Joaquin Valley; and the hospitality and entertainment provided for visitors by Californians throughout the Conference.

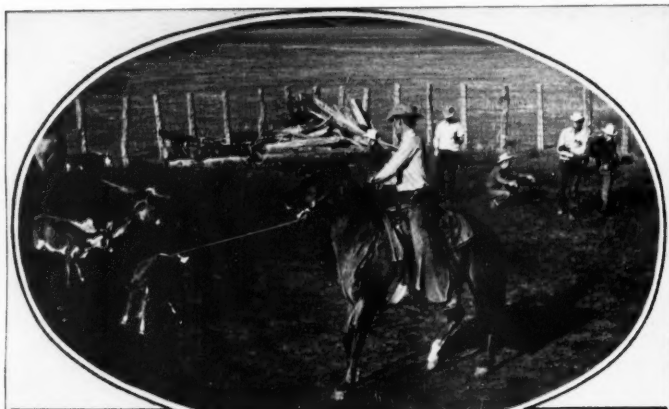
With plans already being made to hold the 1953 Conference in the eastern part of the Belt, at Gadsden, Ala., two trends related to mechanization are evident throughout the discussions of those who spoke at the 1952 meeting and those who attended. They are likely to become of increasing importance in the future.

Needed: Good Managers

■ 1. Efficient Management Is Essential. The need for good management increases with every forward step along the road of mechanization. The man who operated the mule-powered farm and the man who drove the mule could not make as many mistakes, as fast, as can the man who operates the large mechanized farm, or those who drive the machines that work on it.

This good management calls for closer attention to the details of every farm operation, for careful study of accurate records of every cost, and for the utilization of available means of improving

(Continued on page 59)



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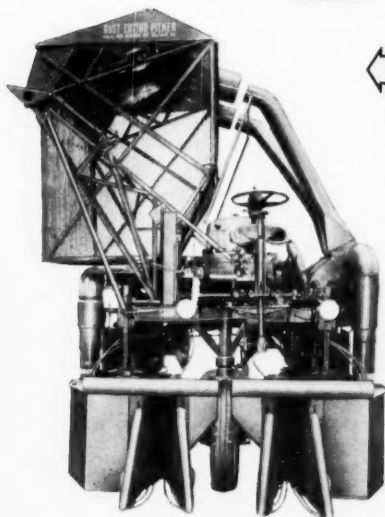
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Address of Welcome

By J. EARL COKE

■ Address of welcome to the delegates at the Sixth Annual Cotton Mechanization Conference, Bakersfield-Shafter-Fresno, Calif., Oct. 22-25, 1952.

WE ARE HONORED that your steering committee selected California as the location for this year's conference. We want you to feel that you are the guests of the Southwest—Arizona, New Mexico, West Texas, and California—a region of irrigated agriculture. I am sure that many of the things you see here, many of our problems and methods, are not unlike your own. I surmise that the greatest differences you will see in contrast with the South and the Southeast are those of irrigation: how we fit irrigation to cotton farming, and modify cotton farming to fit irrigation.

The Local Arrangement Committee has arranged for a tour on Friday through a representative portion of this San Joaquin Valley. The committee spent a lot of time in laying out the route so you will see a lot of good fields, citrus groves, vineyards, dairies, livestock, and so on, representative of this area. However, in spite of everything they could do to prevent it, you will get glimpses of some mighty scrawny cotton—"bumble-bee cotton" I think it's called—some fields of luxuriant grass and weeds interspersed with cotton or other crops. So you will learn the truth: We don't always farm as well as we know how, either.

Cotton

Compared with most of the state represented here, California is a junior partner in cotton experience. We grew a little cotton out here 70 years ago, and it has been one of our important field crops for some 40 years. Recently, however, it has become a predominant crop; in fact, for the past few years, the value of our cotton crop has surpassed that of any other.

Stability is a very important attribute in a crop as well as in a field machine. It is not good to have violent fluctuations in crop production; they result in economic loss and maladjustments in the lives of many people.

It seems to me that here in the irrigated agriculture of the Southwest, mechanization which is now in sight gives great assurance that cotton is a crop of stability—an important crop in our economy.

• **Single Variety**—It may be of interest to you that California is a "single variety" state. The designated variety, except for a limited area in the southeastern corner, is Acala, currently Acala 4-42, the recent development of our George Harrison whom many of you know, either personally or by reputation.

Fundamental to any consideration of California agriculture is one simple, salient fact: it is man-made. Hardly any



J. EARL COKE is Director of the California Agricultural Extension Service, Berkeley.

of the crops, the insects that prey upon them, or the diseases that afflict them are native to this state. They have been imported. In addition to bringing the agricultural crops to the state, man has had to create an environment—or at least, modify the conditions—so that the crops imported might flourish. About 10 million acres comprise California farmland; this is exclusive of grazing land. Of this total, 7 million acres are irrigated—and this acreage produces more than 80 percent of the state's crops.

Add to this a dizzying diversity of farm conditions: We harvest farm products over a range in elevation of more than a mile, from below sea level in the Imperial Valley to 5,000 feet above in the valleys of the Sierra. Crops are grown in places where the rainfall can exceed 100 inches a year, and also where seven inches is called a wet winter. We farm areas that have summer temperatures of 100 degrees every day for weeks, and other areas where frost can occur any month of the year. More than 1,500 different soil types have been identified in California—there's many a perplexed farmer who has two, three, or four different kinds of soil in the same field!

• **Partnership**—The research program here on cotton—a program in which mechanization is important—is, I submit, a grand example of partnership; people working together; contributing to the program, not only funds but counsel and leadership. Let me illustrate this partnership by telling you of the Cotton Field Station at Shafter which you will visit tomorrow morning. Time does not permit me to describe specific contributions and responsibilities, but here is a list of the cooperating agencies: Kern County, its Board of Supervisors and Agricultural Commissioners; the Cali-

fornia Cotton Planting Seed Distributors; the United States Department of Agriculture through its Bureau of Plant Industry, Soils, and Agricultural Engineering; the University of California College of Agriculture, its Experiment Station and its Agricultural Extension Service.

The cotton industry, through our friends in the fields of processing and marketing, has equipped the station with modern ginning machinery, and has contributed substantial funds to the University to amplify its study of defoliation.

And then we have our Cotton Mechanization Advisory Committee made up of key men representing cotton growers, ginners, processors, seed distributors, and marketing agencies. We look to this group of experienced men, with their sound judgment, to counsel with us and give us advice to the end that our cotton program is, if you will allow the expression, kept "in the groove."

While I am on the subject of partnership, I must express to the other states represented here our appreciation and thanks for the information you have given us and for the ideas we have borrowed from you. I am using the word "borrowed" advisedly because we might wish to return some ideas undamaged, but slightly used. A case in point is flame cultivation. We borrowed that idea from Mississippi about 1946. After trying it for a year or so, we were about ready to give it back to Mississippi, but now, we are glad we kept it because we have learned more about using flame cultivation and in the meantime Bill Meek's boys have developed that new burner—which will be shown at the field demonstration tomorrow. This is an example of how we all gain from the cooperation which is promoted by these Beltwide Cotton Mechanization Conferences.

I have seen the registration list. I note the fine representation of manufacturers, executives, and department heads. I wish to express to you our appreciation for the splendid help of your field engineers, branch house service representatives, and dealers. We can have mechanization only insofar as you make the machines available—machines which are adapted to our conditions—machines which are properly serviced, adjusted, and repaired. I note from the field reports of our county farm advisors and Extension specialists that your staffs are doing a splendid job in helping to inform our farmers and their employees on the correct operation and maintenance of your cotton pickers.

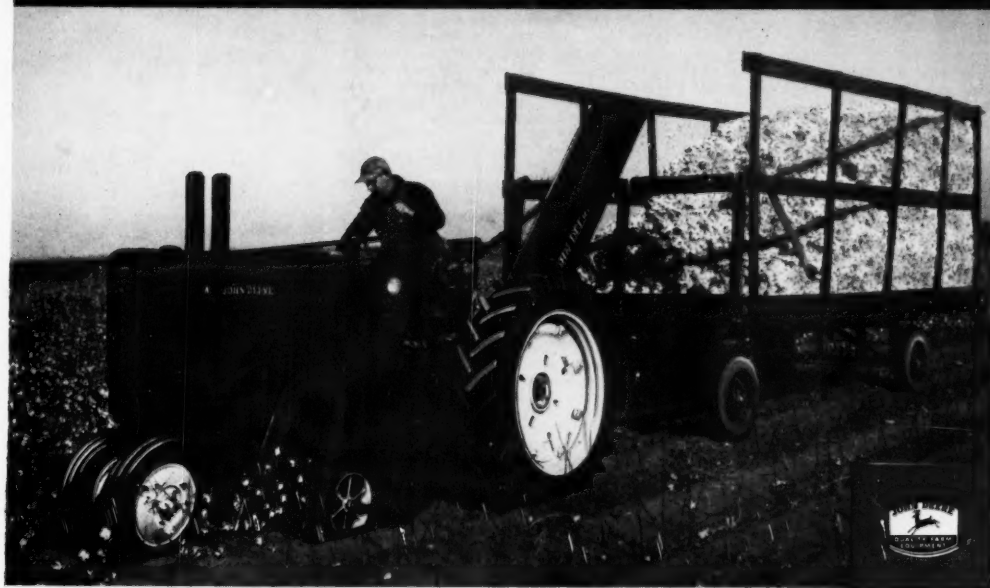
• **Mechanization**—We are not only greatly interested in mechanization but dependent upon it for our cotton production. Our large, level fields are well suited to the efficient use of large power machinery. Our farmers are machine-minded and they gain experience from childhood.

Our implement sales and service organizations are substantial business concerns with good shops well equipped and staffed by skilled mechanics.

California has been subjected to invasions within the past few years. The greatest mass migration in the annals of history has been the influx of people from the East and Middle West since 1940. The increase has been 1,000 people per day during the past decade. This great increase in our population has caused us problems in providing housing, schools, highways, and drinking

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FOR many years, on thousands of Texas farms, the John Deere No. 15 Two-Row Cotton Harvester has been saving more cotton and delivering it cleaner than the average hand-puller. It has been saving from \$20 to \$40 a bale in harvesting costs and eliminating uncertain hand labor. What's more, the John Deere speeds up the harvest . . . gets the cotton out of the fields and to the gin ahead of bad weather.

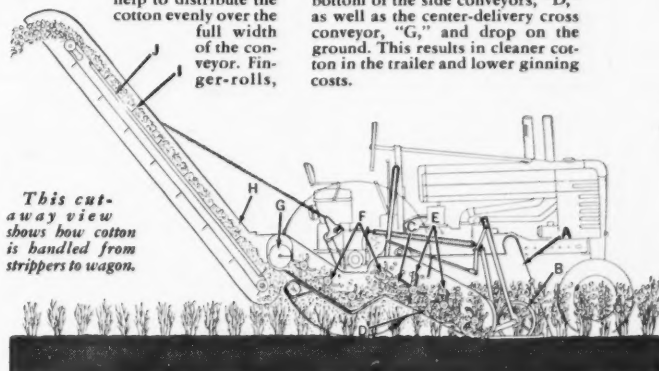
This year, protect yourself against high harvest costs and cotton losses by ordering a John Deere Cotton Harvester now. You'll find this remarkable machine will pay for itself in just a few days on your farm.

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From Strippers to Trailer . . . Here's the Way the JOHN DEERE Handles the Cotton

The cotton plants are guided into each stripper unit by the wide gatherers, "A." The stripper unit is held at proper height for best work by adjustable gauge wheel, "B." Stripper roll, "C," strips all the bolls from the plants and delivers them directly to the side conveyor unit, "D." Propeller blades, "E," help to distribute the cotton evenly over the full width of the conveyor. Finger-rolls,

"F," quickly whisk the cotton to center-delivery, auger-type cross conveyor, "G," which in turn delivers the cotton to the wagon elevator, "H." Rubber flights, "I," attached to a heavy rubber belt, "J," carry the cotton to the trailer behind the tractor. Dirt, dust, and loose trash fall through the screened bottom of the side conveyors, "D," as well as the center-delivery cross conveyor, "G," and drop on the ground. This results in cleaner cotton in the trailer and lower ginning costs.



water. Another invasion of this state without parallel, I think, is that of the mechanical cotton picker. Over 4,000 of these machines have entered our fields in the last six years. With them has come other machinery, such as improved cotton trailers, field loading machines, and modernization of our cotton gins to handle machine-picked cotton properly. This revolution has involved an investment of more than \$50 million (a sizeable sum under any administration). But this invasion has been good for us. Machines, in general, have been good investments, both in lowering our costs of production and in reducing human toil.

• **Labor**—Hand labor brings a low reward because a worker by hand labor can produce so little. Mechanical power enables a worker to produce much. It is high and efficient production that gives Americans a high standard of living.

We have a labor problem in California; in fact, right here in the San Joaquin Valley it is most critical at times. Any state wants a big labor payroll and that is good if the labor is productive and if the supply of workers and the number of jobs are in balance. The trouble comes when the number of jobs, the amount of work to be done, fluctuates violently between peaks and troughs; times when we are short thousands of workers and, in a few weeks, have thousands of workers without jobs. Our seasonal farm labor demand reaches a maximum along in the fall when harvest crews are needed for grapes, walnuts, tomatoes, sugar beets, in addition to cotton. You folks in the cotton industry are making a real contribution to the reduction of our peak labor demand by way of the mechanical cotton picker, which we have long awaited.

We are glad you have come to visit us, so we can become better acquainted with you and can learn more about cotton mechanization together. We sincerely hope your trip will be worthwhile and thoroughly enjoyable.

• Study Mechanization Effects in Delta

PRELIMINARY results of studies of management and costs in cotton mechanization have been reported by the Delta Branch Experiment Station, Stoneville, Miss. They reveal that with current prices the chief effects of mechanization on the organization and operation of a typical 750 acre Delta cotton plantation are:

1. More cropland is diverted to cash crops since livestock feed declines in importance.
2. Labor requirements are reduced from roughly 33 families to eight.
3. Investment in power and equipment increases from \$9,500 to \$51,000.
4. Total investment increases from \$182,000 to \$214,000.
5. Labor requirements for producing cotton are reduced from 160 hours per acre to about 30.
6. Returns to land and management are increased from roughly \$12,000 to approximately \$37,500.
7. Costs of producing cotton (excluding land and management) are reduced from 27.9 to 13.5 cents per pound of lint.

These developments presuppose the use of top-level management and skilled labor. Only an extremely small number of plantations are this advanced.

• Irrigation Interest Gains in South

INTEREST in irrigation, stimulated greatly by the current drouth, has reached a new high in Alabama, Georgia, Tennessee, Mississippi, Louisiana and Florida, according to the October Farm Bulletin of the Federal Reserve Bank of Atlanta. The report points out that average annual rainfall in the area is up to 50 inches, but that rainfall distribution is such that farmers can expect periods of excessively dry weather and other periods of excess moisture.

"Despite the need for and the possibilities of irrigation, research on this subject is still in its infancy," says the bank's report. "It will require years of intensive research to determine all of the facts. This task is complicated by the numerous soil types that have different rates of absorption and water-holding capacity."

The report states that many questions asked by farmers can be answered only in terms of irrigation on an individual farm, but that experiments have established that irrigation will pay in most instances.

"In fact, an irrigation system can pay for itself in one season such as the summer of 1952," the report continues. "Under normal weather conditions, however, the most profitable use of irrigation may be found on farms having more intensive crops such as truck crops, specialty crops and tobacco, from which returns are high."

Pointing out that extreme dryness in the area is infrequent, the report adds that farmers can, with irrigation, consistently maintain high yields during short periods of dry weather that occur almost every year.

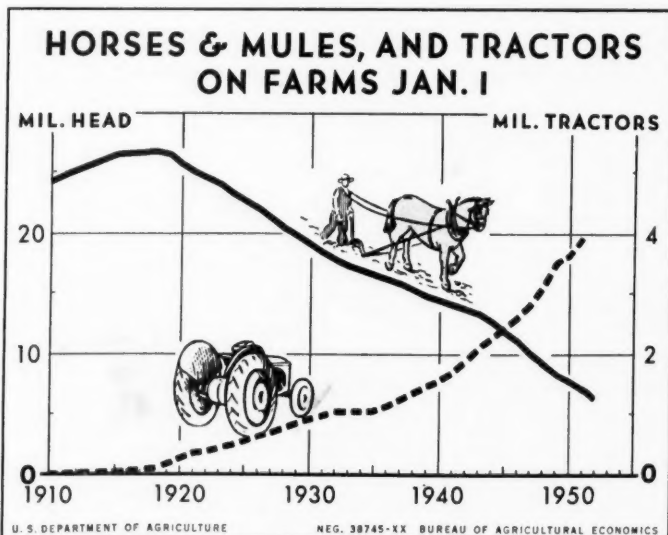
"It must be recognized, however, that high yields are not dependent upon ade-

quate moisture alone. High productivity also depends upon good soils as the basic resource and upon the use of good farming practices. This means that only the more efficient farm managers can be expected to use irrigation profitably.

"For an individual farmer, the question of adding an irrigation system often depends on the advisability of increasing his capital investment. The profitability of a beef cattle operation, for example, is predicated on the production of cheap feed. Improved pasture is generally recognized as the cheapest source of feed. When pastures for beef cattle are irrigated, the cost of producing feed may actually increase. Additional acreage of a deep-rooted legume crop may serve as an alternate form of insurance against feed shortages during periods of dry weather.

"The principal objective of dairy farmers who have irrigation seems to be to maintain a high level of milk production throughout the year from grazing, and thus eliminate the necessity of feeding purchased concentrates. When milk production drops with the lack of grazing during the dry summer months, it becomes very difficult to restore it to a high level even after rain occurs. It is to the advantage of these farmers to maintain a high average production throughout the year. Truck farmers and similar growers who irrigate can expect to have a higher level of production the year round and thus have some produce to sell when non-irrigated crops are short.

"Not all farmers can use irrigation to advantage. Even when an adequate water supply in the form of a stream or pond is present, the acreage that can be watered may be limited by the location of the water supply or by the kind of soil and the way it is used in the farming program," the report concludes.



THE INCREASING use of tractors, accompanied by the virtual disappearance of horses and mules, is a major factor in the mechanization of American agriculture during the past half century depicted graphically on the above chart. In 1910, farmers used about 25,000,000 horses and mules and only 1,000 tractors; today, the number of tractors on farms exceeds 4,000,000 while horses and mules have decreased steadily each year to only slightly more than 5,000,000.

Insects Do Heavy Damage

Mexican Lint Crop Down 19 Percent

■ **MATAMOROS** and Laguna areas show heavy decrease, as other sections gain in cotton production. Western irrigated farms to plant more.

Mexican cotton production for 1952-53 is currently estimated at 1,100,000 bales, 19 percent below the 1951-52 crop, according to latest information received by USDA.

The decline in the 1952-53 Mexican crop is primarily the result of sharply reduced production in the Matamoros and Laguna areas, as the combined crop in other producing areas is estimated to be somewhat above last year. The 1952-53 acreage for harvest, estimated at 2,129,000 acres, compared with 2,377,000 acres a year earlier.

In Matamoros, picking of the 1952-53 crop was largely completed by the end of August. Production is estimated at about 194,000 bales, only a little over half as large as the 1951-52 production despite a slightly increased acreage. This year's small crop was primarily the result of serious infestations of pink bollworm, boll weevil, and fleahopper. Rains during June and July minimized the effectiveness of insect control programs. Also, dry weather earlier in the season adversely affected the crop to some ex-

tent. The quality of the 1952-53 cotton was likewise affected by unfavorable weather and insect damage, and it is estimated that only about 20 percent of the crop will be middling or better.

In an effort to control pink bollworm more effectively in the Matamoros area, the Mexican Government issued a decree during the late summer of 1952 empowering the Regional Committee of Agricultural Defense to carry out the cutting and turning under of cotton plants at the expense of any grower who may have failed to do so in response to government orders. Growers apparently realized the importance of plowing under stalks as a control measure but appealed to the government for financial assistance in view of the disappointing outturn of the current crop, says USDA.

In Laguna the damage from insects and disease was considerably above average although not as severe as in Matamoros. Picking operations are progressing satisfactorily and substantial stocks are accumulating at local gins. Most of the cotton ginned thus far appears to be clean and of good quality.

In contrast to Matamoros and Laguna, the 1952-53 prospects are very favorable in Mexicali and the West Coast areas, with production exceeding last year. In Mexicali, insect damage during 1952-53 was negligible and labor supply adequate. Cotton gins began operating on Aug. 13. Three additional 5-90 gins, two in Mexicali and one in San Luis, will soon begin operating and the existing facilities appear to be adequate for handling the increased crop.

The West Coast area (mostly state of Sonora) where production also increased in 1952-53, is becoming more important as a cotton-producing area.

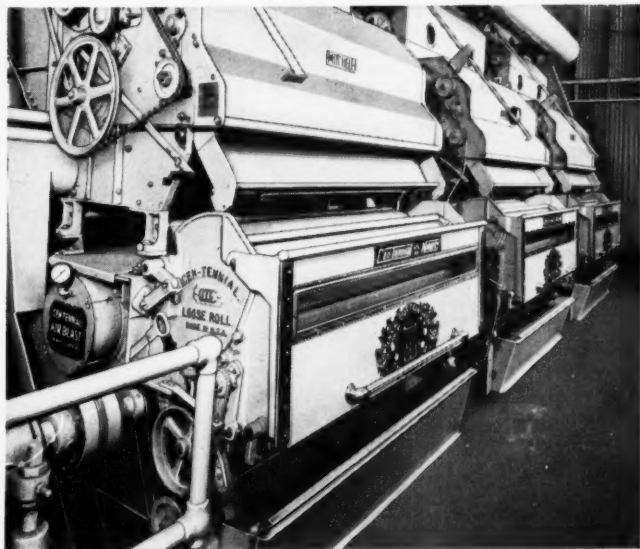
Estimates of the acreage of irrigated or summer cotton to be planted for the 1953 season are not yet available as planting is now underway. However, a further expansion of cotton acreage is now expected in this area. A recent government authorization has given cotton exporters the right to use Guaymas as an exit port. This is expected to facilitate the marketing of West Coast cotton.

A Special Defense Committee is being formed by the Mexican Government for the purpose of studying cotton diseases and insects and to provide instructions in modern cotton-growing techniques. Torreón and Matamoros, the two areas where the most serious crop problems have been encountered and where most of the research relating to disease and insects will be conducted, have already formed their committees for this work.

Nutrition Conference for Florida, Nov. 13-14

Beef cattle, dairy, swine and poultry nutrition will be discussed at the Florida Nutrition Conference, Nov. 13-14 at Gainesville. Dr. George K. Davis, head, animal nutrition laboratory, Florida Experiment Station, is in charge of arrangements.

Out-of-state speakers will include Dr. J. R. Couch, Texas A. & M. College; Dr. H. W. Titus, Limestone Products Corporation of America, Newton, N. J.; Curt Severson, Ralston Purina Co., St. Louis; Dr. Jerry Sotola, Armour & Co., Chicago; Dr. R. A. Dutcher, emeritus professor of agricultural chemistry at Pennsylvania State College, and Murry Cohen, Joseph E. Seagram & Sons, Inc.



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Write for Bulletin 51-G

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Response and Purpose Of the Conference

By HAROLD A. YOUNG

■ Address delivered at the Sixth Annual Cotton Mechanization Conference, Bakersfield - Shafter - Fresno, Calif., Oct. 22-25, 1952.

WE ARE ABOUT to get started on the formal program for this, the Sixth Annual Beltwide Cotton Mechanization Conference. During the course of the program, we will plunge into a welter of individual problems, practices and possibilities in cotton mechanization. We will look into the details of chemical weed control, of mechanical harvesting, of cotton irrigation, and so on. We will get down to specifics, and that is as it should be.

But before we get down to specifics—before we take our jig-saw and cut mechanization into assorted pieces—I think it is in order for us to review a few general questions about mechanization. These are questions that have been asked in the past, questions that certainly will be asked again in the future.

First of all, this question: Just what do we mean by "cotton mechanization" anyway? Many persons tend to think of cotton mechanization in its popular but narrow sense; that is, as the mere substitution of machines for men.

Mechanization means more than that, especially to those of us gathered here today. We know from experience that haphazard, thoughtless substitution of machines for men can be a burden rather than a blessing.

We're all familiar with the farmer who goes overboard for machinery. He buys a second tractor whether he needs it or not—maybe just because his neighbor has two and he doesn't want to be left behind. This farmer may save labor, all right, but to what end? Unless he can find a better use for the labor he saves, he may find himself worse off instead of better off.

Obviously, then, the mere substitution of machines for men can be a bad thing as well as a good thing. But this just won't do, because, to us, mechanization is a good thing. We've got to have a broader meaning for it.

The kind of mechanization we are talking about is involved in almost every phase of cotton production, starting with breeding and following through to ginning. The breeder, for example, may work on new varieties that will be better adapted to mechanical stripping and picking. The ginner, in turn, is faced with the necessity of equipping his plant to handle mechanically harvested cotton.

Mechanization must go hand in hand with good farm management. When a grower starts using machines, he needs to reconsider his entire farming operation . . . his basic combinations of land,



HAROLD A. YOUNG is President of the National Cotton Council.

labor, and capital . . . his choice of enterprises . . . how to use labor most efficiently . . . whether to seek credit for expanding farm size and buying additional equipment . . . and many related things. Above all, the farmer must learn to think in terms of a mechanized operation.

We can say, in short, that mechanization is as broad as the entire field of cotton production. It is the process of developing new machines and methods, and of fitting them into the complex technology of cotton production. Its goal is to increase production efficiently through greater output per worker.

If that concept of mechanization will get by, I'd like to go on to another question—the question, "Why do we get together every year for a cotton mechanization conference?"

In answering this question, I think we need to look back a decade or so, to the time when cotton mechanization was still in its infancy.

As recently as 1940, there was only a sprinkling of tractors across the Cotton Belt—only 300,000 on all the farms in the 14 major cotton states. For land breaking, planting and cultivation, the grower depended on mule-power. He thought of mechanical harvesting as a remote, far-fetched possibility.

During the 1930's, with the great depression, the cotton grower actually had little incentive to mechanize. He had all the hand labor he needed. At the same time, he had little money and limited credit with which to buy new machines and equipment.

Then, as the country began to get back on its economic feet, and as we

moved into the demanding period of the Second World War, he suddenly found himself wedged, so to speak, between "the rock and the hard place." He had the task of keeping cotton production high enough to meet the emergency. But he had to do it with a rapidly shrinking supply of hand labor. The answer, of course, was mechanization to increase productivity per worker.

But here again, he faced serious problems. He and his workers had little of the know-how that is so essential for efficient mechanization. Moreover, they found that there were few machines that had been highly specialized for cotton production. He had to take "hand-me-downs" — machines and equipment developed for other crops—and adapt them as well as possible to his cotton needs.

During the war, the cotton grower used these hand-me-downs and, as all the world knows, produced enough of this vital fiber to meet the emergency.

After the war, he still found himself with his back to the wall. His supply of labor continued to go down. His production costs continued to go up. And cotton's competition continued to get keener.

The manufacturers of synthetics continued to improve their production efficiency. The lure of alternative crops — crops that required less labor and returned as much or more profit—became increasingly attractive to the cotton grower. Foreign countries began competing seriously for part of cotton's markets.

The only way we could compete successfully was through increased efficiency, which could be brought about largely through mechanization and related technology. Growers had to make every work hour count.

Mechanization was no longer just an opportunity. It was a crying necessity.

Now, as we all know, the process of mechanization isn't a simple one. It is a long, tedious and exhausting job. First, we must have research to develop specialized machines, equipment and techniques for cotton production.

Once machines and equipment are developed, there's the task of getting them into mass production so they will be widely available.

And finally, there's the matter of getting widespread, efficient use of machines, equipment, and techniques by cotton growers.

After the war, despite much progress, this long process from invention to use was still a big stumbling block in the path of mechanization. The need for a speed-up was seen by leaders throughout the cotton industry, and they felt that something could and should be done about it.

Their thinking soon crystallized into an idea—an idea that led to the first Beltwide Cotton Mechanization Conference in Stoneville, Miss., in 1947. This was the idea that progress could be materially speeded up if there were better liaison and unity of purpose among the key groups involved in mechanization progress.

The National Cotton Council, representing the raw cotton industry, acted upon this idea and initiated the series of annual mechanization conferences. Plans for these events have been developed primarily by a "steering committee" composed of leaders from all interested groups. Among those invited to attend have been private and govern-

(Continued on page 24)

From our Washington Bureau



By **FRED BAILEY**

Washington Representative

The COTTON GIN and OIL MILL PRESS

• **What to Expect**—First impressions on the Presidential election results are that so far as Southern agriculture in general and ginneries in particular are concerned, you can expect:

(1) A continuation of present general farm policies and programs at least through 1953 and very probably through most of 1954.

(2) A gradual shifting away from rigid Washington controls, and in place of those a noticeable trend toward decentralization of farm program administration.

(3) Closer working relationship between farm organizations and farm commodity groups and the Department of Agriculture. That will be the No. 1 job of the next Secretary.

(4) More talk about flexible supports. Although both Presidential candidates made much of their approval of the 90 percent of parity rigid supports through 1954, neither of them regard 90 percent as a permanent policy.

(5) Farm groups will be asked to take the lead in developing a long-range farm program. The Brannan Plan mistake of wrapping one up and delivering it to Congress will not be repeated.

(6) In short, don't look for any quick or big changes in Washington farm programs for several months after the new administration takes office next Jan. 20.

• **Farm Troubles Ahead**—The next Administration is due to run smack into farm troubles before the next year is out. It will be under pressure to do something about declining farm prices against rising costs. Much of that pressure will come from growers of perishable commodities.

Farm prices, led by cotton and beef cattle, have been slipping at a disturbing rate in recent months. The general average of farm prices has been pulled down by 4 percent in the past two months. Meanwhile, production costs have continued at near record levels.

At the annual USDA Outlook Conference in late October, the economists were almost unanimous in predicting that this trend toward lower prices and higher costs will continue in 1953. However, the percentage changes probably will not continue at the rate of the last couple of months.

In the background of farm price forecasts was the rather general belief that a general business deflation will start in the last half of 1953, when spending for defense begins to taper off. Some of the economists used the term "recession," but most of them were inclined to believe that the drop will not be great enough to warrant the use of that term.

It was, however, significant that in contrast with the past couple of years, not one of the economists argued that further inflation is the big danger for 1953. Production, both industrial and

farm, is expected to be adequate to meet demand.

• **1953 Production Goals**—Farm production goals for next year are, for the most part, to be dumped into the lap of the next Administration. Goals for most spring-planted crops are to be held up until after next Jan. 20. Cotton is an exception.

The Department originally planned to send tentative goals to the State PMA committees in late October, but that was vetoed by the Front Office. The explanation was that although the tentative goals were supposed to be confidential they might leak out just ahead of the election and be construed as having political significance.

Likewise, there has been considerable debate in USDA on how large the 1953 cotton goal should be. Some argued in favor of a "realistic goal" of 14 to 14½ million bales. They contended that this would be very nearly in line with actual demand, that it might even add a little to the carryover.

There has been very little support for another 16-million bale goal. Most cotton officials are changing their minds on building at least a 5-million bale reserve. The sharp drop this fall in prices with only a 3-million bale carryover in sight caused officials to worry about what might happen if the carryover should be approximately doubled.

Although the final decision may not be reached until announcement of the goal, now scheduled for Dec. 16, our information indicates that it will not be more than 15 million bales. It could be a bit less than that.

• **1953 Labor Picture: Worse**—Field reports to the Agricultural Department indicate that actual 1953 cotton acreage, regardless of the goal, is likely to be less than this year. Washington officials are being told that labor shortages and rising costs will discourage some producers next year.

All indications in Washington are that labor will be a more serious problem next year. It would have been a more serious this year if the weather had not been almost ideal for cultivation and picking.

In forecasting the 1953 farm labor situation, the Department looks for an average increase of about 5 percent in wage rates, compared with 1952. It thinks that there will be no general shortage, but that it will be serious in some areas. Thinking is that the uncertainty of labor may cause some farmers to hold down on plantings.

Workers very probably will be available again next year from Mexico. However, both the AFL and the CIO have started working quietly to at least limit the number of Mexican Nationals admitted. They also plan to push for en-

actment of a minimum wage for all farm workers, plus unemployment insurance.

The military draft poses another threat to the farm labor supply. The military will ask for one million enlistments next year, one-third over this year, and it expects to get 600,000 of those through the draft. That will mean, if carried out, a sharp decrease in deferments.

• **What Caused Inflation**—A routine government press release issued a few days ago by the U.S. Bureau of Printing and Engraving provides the best explanation we have seen on why we have had inflation in the past few years. It, however, was not intended for that purpose.

The release said that before the end of this year the amount of money, bills and coins, in circulation would reach the staggering total of more than \$30 billion. That did not include bonds, bank deposits or the like. At the start of World War II the amount was just over \$11 billion.

Since the start of the war in Korea the Bureau of Printing and Engraving has been making a net addition of more than \$200 million a month to the amount of currency in circulation. That would be an increase of around 1 percent a month in the money supply and, significantly, also the same percentage by which prices have risen.

The national average of prices and wages now is about 275 percent of 1941. The amount of money in circulation has increased by almost exactly that percentage. Economists long have argued that prices are simply the multiplication of goods and services available by the supply of money in the hands of willing buyers.

Privately, they have said that price controls which ignore that fact are a farce meant to deceive the people. Without intending to do so, the government now seems to have confirmed that finding.

U.S. Food Distribution Tops 21 Million Tons

A survey on food distribution during the year ending July 1, 1952 showed that U.S. shipped abroad more than 21,000,000 tons or five times prewar exports, reports USDA.

The food accounted for 15 percent of all American food distribution. Civilians in this country took about 83 percent of the total with military agencies at home and abroad getting the rest.

Exports marked a nine percent increase over the shipments abroad during the previous year, because of poor crops in Argentina, Australia and India as well as continued small rice exports from Southeast Asia.

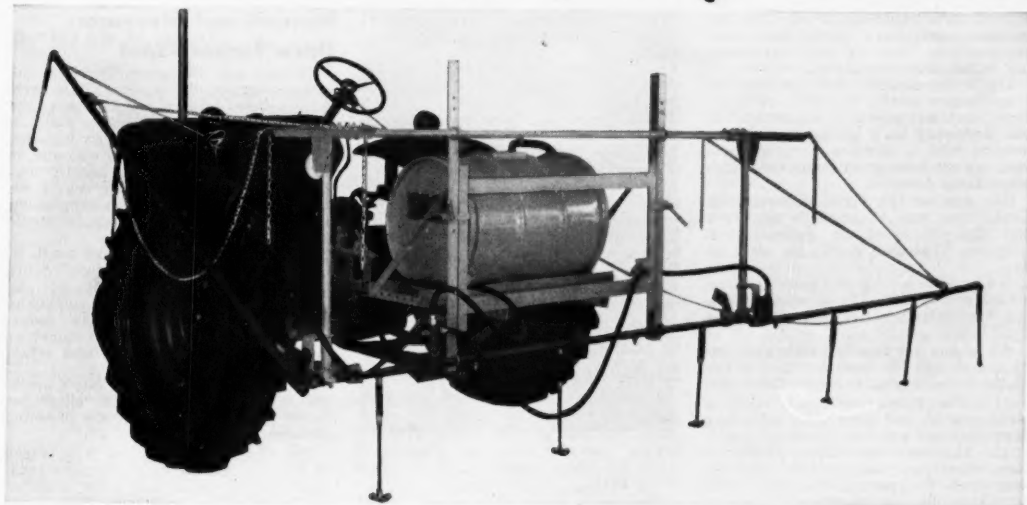
USDA warns that farmers should not expect such a heavy volume of exports next year or for a long time to come. Foreign markets will still need more than they did in the late 1930's but not as much as in recent years.

The reason for the expected decline during the current fiscal year is a better crop outlook in many countries.

Moreover, much of the food has been paid for recently by U.S. foreign-aid money. Economists say the only way foreign markets for U.S. agricultural products can be assured is by other nations being able to sell their products in this country.

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City.....RFD.....State.....

I raise.....acres of cotton.

Response to Welcome Address

(Continued from Page 21)

ment research workers, representatives of the farm machinery industry, members of state Extension Service and Vocational Agriculture staffs, and other key persons. Those of you here today fall within these categories.

The conference was not developed as a machinery show, nor as a publicity stunt, nor as good-will convention. It was developed as a get-together where persons with a common purpose could meet on common ground and help each other move forward.

Our goal at the First Mechanization Conference was to promote teamwork and thus to speed up mechanization progress. That goal is still the same today.

We've come a long way since the first conference in 1947. The speed-up in cotton mechanization has been almost beyond belief.

All of you are familiar with what has happened, but I'll remind you of a few of the more impressive accomplishments:

(1) The flame cultivator, chemical weed control, and defoliation have been developed and put into practical use.

(2) The mechanical cotton picker has been developed commercially, and has been made so practical that right here in California, it harvested about 55 percent of the state's cotton crop last year—and will harvest a much higher proportion this year.

(3) The stripper-harvester has become commonplace in many areas.

(4) There have been major improvements in spraying and dusting equipment.

(5) We have used ingenuity in successfully converting several operations into one multiple operation.

(6) There have been vast improvements in stalk-disposal equipment.

(7) The high-speed sweep has been developed and put into action.

In fact, we now find ourselves on the verge of complete mechanization. We can see daylight ahead. But we all know that there's still a long way to go. We've got to keep moving ahead. And as we get started on this conference today, I feel completely sure that we will keep moving ahead.

Grade of Ginnings Still High, Staple Short

Continuing the trend of earlier reports for 1952, the grade of cotton ginned to Oct. 18 this season averaged higher than for any year since 1948, while the staple length was the shortest since 1947.

The grade index of ginnings to Oct. 18 was 98.3 compared with 97.3 a year earlier and the five-year average of 98.1. Ginnings averaged higher in grade than

a year earlier in all states except Georgia, North and South Carolina, New Mexico and California.

About 1.0 percent of the cotton ginned to Oct. 18 this season was reduced in grade due to rough preparation. This compares with 1.3 percent for the same period last year and the 1947-51 average of 3.8 percent for the period.

Stewart and Stevenson Open Larger Plant

Stewart and Stevenson Services, the nation's largest distributors of General Motors diesel engines, has announced the opening of its new and larger plant in Corpus Christi, Texas. The new building, a completely modern structure located in the city's newest industrial district, provides for greatly expanded engine repair facilities as well as a proportionately increased stock of engine repair parts.

The announcement was made by R. N. Conolly, manager of the company's South Texas operations, who said Stewart and Stevenson Services had been supplying the power needs for all oilfield, industrial, marine, and agricultural industries in that area since they became established there in 1946.

"Our new location on the city's northwest edge," Mr. Conolly said, "eliminates heavy traffic problems for our incoming customers."

The Corpus Christi plant is a branch of Stewart and Stevenson Services headquarters in Houston with other branches and sales offices in Wichita Falls, Lubbock, Dallas, San Juan, Longview, Odessa, San Antonio, Brownsville, Beaumont, Laredo, and Port Arthur.

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World Cotton Situation

By **READ P. DUNN, Jr.**

■ Extracts from address delivered at the Sixth Annual Cotton Mechanization Conference, Bakersfield-Shafter-Fresno, Calif., Oct. 22-25, 1952.

The Present Situation

EVERYONE would like to know just how much U.S. cotton will be demanded in the current season. Unfortunately, it is impossible to say what the actual off-take will be. But a careful analysis of market factors makes it possible to make an intelligent estimate.

Since the United States is the largest consumer of cotton in the world, it is apropos to look first at probable U.S. consumption.

For the season at hand domestic consumption estimates now range from 9 million bales, or a little less, to as high as 9.75 million bales. With the fairly high level of mill consumption during August and September, a number of analysts are tending to put their estimates somewhere in the middle part of the range. The Department of Agriculture recently estimated consumption of U.S. cotton this season at 9.4 million bales. To this was added 100,000 bales of imported cotton which domestic mills are expected to consume.

In calendar 1951, which we in the Council are now using as a base period in our studies, total mill consumption was 10.1 million bales. About 8 million bales were for net domestic civilian consumption, which is in line with the net civilian off-take for the last several years. Net exports of cotton textiles and manufactured products accounted for about 800,000 bales. This also was in line with the average export off-take for the past several years. Military procurement accounted for another 800,000 bales in 1951. This, of course, was higher than at any time since the war because of the rapid build-up of the armed services in this period. In addition there was an increase in inventories, especially at the mill and retail levels. In 1951 it appears that some 500,000 bales of raw cotton went to increase inventories at the manufacturing and retail levels to put total stocks at a very high level.

The changes which began in the latter part of 1951, and which have continued to date, probably have not materially affected net civilian off-take in the country. But in this period requirements were being met to a greater extent than normal out of inventory, so mill activity has been lower than usual for this reason. Then exports dropped off some due to the world textile recession and the tightening of trade restrictions by our foreign customers. Since military purchases did not pick up as many expected after 1951, mill consumption for the past cotton season averaged only 9.2 million bales.

For the current season there are both favorable and unfavorable factors in-



READ P. DUNN, Jr., is Director of the Foreign Trade Division, National Cotton Council, Washington, D. C.

fluencing cotton consumption. On the optimistic side, the textile industry is in a much stronger position since stocks at mill and retail levels have been reduced to what most people consider reasonable levels. There are some indications that stocks may be built up some during the current season, but most textile executives, remembering the experience of a year ago, are proceeding with caution. Retailers also are trying to hold stocks to a normal ratio to sales. The increase may be in the pipeline, especially in stocks of secondary processors, which are now low.

Another factor on the optimistic side is the increase in population. There will be almost 3 million more people than in 1951, and they will need clothing and household goods. Even considering the men who have changed from civilian to military status, this population increase should create additional markets.

On the optimistic side again we should point out that cotton, through research and promotion, is strengthening its competitive position and expanding its markets in a number of important lines in the apparel and household fields which may result in greater consumption.

However, being realistic, we must also take cognizance of the unfavorable factors. It is likely that the competition from other fibers will be keener than ever. The capacity for producing synthetic fibers is greater than ever and will be further expanded during the year in several lines, especially high tenacity filament yarn for tire cord. Supplies of wool, jute and paper are also much larger. Synthetic fiber production is well below capacity and price competition is keener than ever in some fields. As a result cotton will be hard pressed, especially in the industrial field where price is a major factor as it is in tire cord.

Cotton textile exports will probably be sluggish as a result of the numerous import restrictions recently imposed by many of the United States regular overseas customers.

Though military orders are expected to be high, they will probably not reach the peak attained in the first full year of mobilization.

Foreign demand for U.S. cotton is expected to be down from the 5.5 million bales exported last year. Most estimates now range from 4.3 to 5.0 million bales. An estimate of 4.5 million bales was just released by the U.S. Department of Agriculture. On the basis of current economic trends in Europe MSA authorities are inclined toward the high side of the range.

Conservatism in evaluating the foreign demand for U.S. cotton in the current season is based on several factors.

Though the foreign cotton crop may be a million bales below what it was last year, the carryover of foreign cotton in the hands of the producing countries was somewhat larger than the preceding season with the result that the supply, or the availability for export, this season may be 1.5 million bales larger. Even more important, in the past two years since Korea real individual purchasing power went down with inflation while textile production went up with the result that the textile markets of the world became saturated at the existing level of purchasing power. In fact, world stocks of textile goods are still sizeable. For this reason, textile production and hence raw cotton consumption may be somewhat lower in certain areas than last year. Furthermore, the competition of synthetic fibers continues strong, especially in Western Europe. This fiber competition is expected to be very keen because of the price advantage of synthetic fibers and because of the limited availability of dollar exchange which encourages the use of synthetics as a self-sufficiency measure.

There are, however, a number of strong factors in the international field which will encourage U.S. cotton exports. Most important is that purchasing power of foreign countries—what we call foreign exchange availability—will be high, almost at record levels. Direct dollar earnings of the rest of the world, realized from the sale of goods and services to the United States, are now running very high. In anticipation of continued economic activity in the United States so-called free dollar earnings are expected to exceed \$15 billion for this season. Considering the fact that prices of many imported commodities are much lower, this is a very high figure. To this must be added about \$1.6 billion of MSA direct aid and almost that much more of indirect aid including military. Compared with previous years this total indicated dollar exchange availability of over \$18 billion may be an all-time high.

The fact that the rest of the world will be less dependent upon the United States in the current year is encouraging. The food situation is much better in Western Europe than at any time since the war. A number of MSA countries such as France and Turkey, which have been importers of grain will be sizeable exporters this year. The availability of both capital and consumer goods in Europe will be greater this year than any year since the war, so the need for such products from this country will not be nearly so great. Then the need for coal

and petroleum from the dollar area will not be nearly so great due to the increased production of coal in the Ruhr and the increased availability of petroleum in sterling. Another very encouraging fact is that the cost of living has been leveled out or is tending down in most of Europe while industrial activity is still increasing. There are strong indications that Europe may therefore be able this year to meet its mobilization requirements and still increase the supply of consumer goods. This greater economic activity will mean greater purchasing power and a higher level of consumption. Such developments will help in working off surplus stocks of textiles and will thereafter stimulate consumption.

Another factor which is favorable to U.S. cotton exports is the fact that much of the foreign-grown cotton available in non-dollar currencies is priced 10 to 20 percent above U.S. cotton. In many cases these prices may continue to be held

artificially high by price support actions of governments in the respective producing countries, at least for several months, which will give U.S. cotton an advantage.

All in all, it is not unreasonable to expect a total off-take in the United States of about 14 million bales. With a crop estimated at 14.4 million bales (about 14.3 million running bales) and a small quantity of imports, the carryover at the end of the season might increase from about 2.7 million to about 3.1 million bales. This estimated carryover is roughly 22 percent of the indicated disappearance and is below normal as defined by the Agricultural Adjustment Act.

Long Range Market Prospects

The long range prospects for cotton consumption are bright, not only in this country but throughout the world. First let's examine the demand factors.

• **Domestic Market:** Greater domestic consumption of cotton in the United States is dependent largely upon the following factors — increasing population, increased per capita fiber consumption, and competition among the fibers.

In the United States population has been increasing at the rate of about 1.5 percent per annum. This creates an immediate opportunity to expand consumption in the apparel and household uses as there are about 2.5 million more people each year to be clothed and housed.

The relationship of population to consumption is impressive when considered over a period of years. Even if the rate of population growth tapers off and the increase is only 2 million people per year, this would mean an additional 20 million people in the next 10 years. If cotton consumption increases in tempo with population this would mean an increase in demand of approximately 1 million bales of cotton.

Increasing per capita consumption of cotton is not easy in the United States because the level is already high and competition among the fibers is keen. But it has been done. We now have positive evidence that we have actually increased net per capita consumption of all textiles in the apparel field 3 to 4 pounds in relatively few years. We do not think this is the top by any means. We firmly believe that by continued research to develop new and improved products and by continued promotion, it is possible to raise this consumption level still higher.

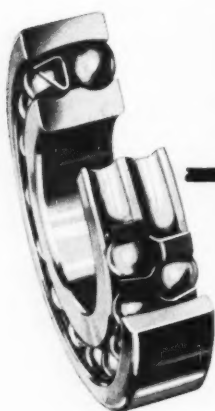
But the cotton industry must continue to be on its toes and strengthen and improve its competitive position. That this can be done has been proved. In the past few years, with the development of new and improved products, better finishes, better styling, better utility, and especially with a great deal of promotion, cotton's share of the women's street dress market has increased noticeably. Cotton recently improved its competitive position in other things like sport clothes and piece goods. In rugs the use of cotton has increased from about 15,000 bales a few years ago to about a quarter of a million bales now and the market is still growing. In the apparel and household field cotton is competing strongly with the other fibers.

It is true that in certain markets where price is a major factor of competition, as it is in so many industrial products like tire cord and bags, cotton has a very difficult job. We have lost ground in the industrial uses. The challenge here is to improve strength and other qualities of cotton so that manufacturers will be able to turn out superior cotton products at competitive prices. Mechanization and better and more efficient production practices have been promoted to hold and/or reduce production costs as a means of strengthening cotton's position in all of the important end use markets.

The bag campaign, which capitalizes on the re-use value of cotton bags, gives us the conviction that it is possible for cotton to overcome a price disadvantage even in the industrial field.

By and large the long range prospects for cotton in the domestic market are bright. For the past few years the net civilian off-take has been about 8 million bales. This conceivably can be expected to increase a million bales in the next 10 years, provided we hold our own

(Continued on page 76)



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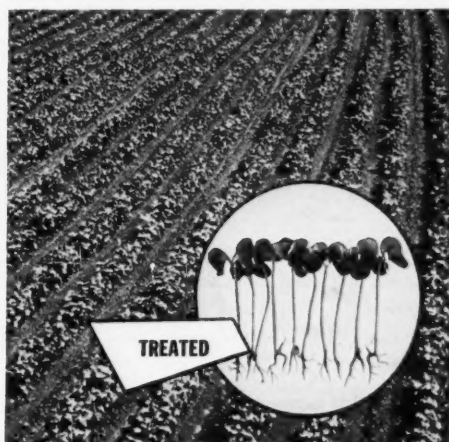
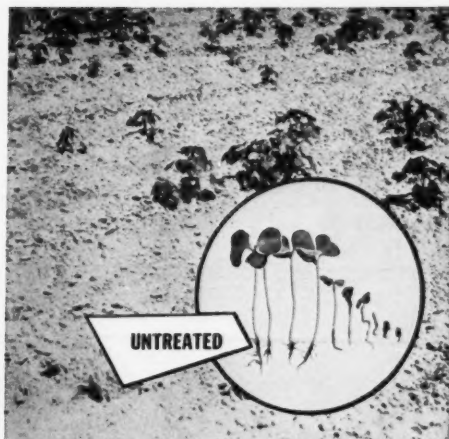


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"Ceresan" seed treatment for grain controls seed rot, seedling blights, many kinds of smut on wheat, oats, barley and rye. Helps produce better stands and better yields of clean grain

"Arasan" seed treatment for grass and legumes controls seed rot and seedling blight, helps these tiny seeds to get a strong start. Improves stands and vigor resulting in better yields and pasture crops.

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MECHANICALLY DELINTED COTTONSEED

2½% "Ceresan"	Dry 6 oz. 100 lbs.
"Ceresan" M	Dry or Slurry 3 oz. 100 lbs.

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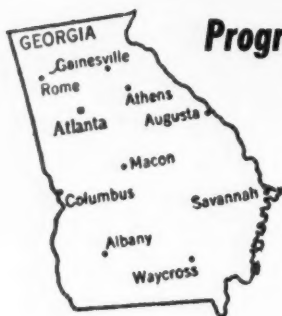
2½% "Ceresan"	Dry 4 oz. 100 lbs.
"Ceresan" M	Dry or Slurry 2 oz. 100 lbs.

FUZZY COTTONSEED

2½% "Ceresan"	Dry 9 oz. 100 lbs.
"Ceresan" M	Dry or Slurry 4½ oz. 100 lbs.



GEORGIA has held a number of tractor schools for operators. This one was at Dublin, for Negroes.



Progress of

COTTON MECHANIZATION IN GEORGIA

Seventh in a Series

MECHANIZED cotton production in Georgia has followed the trend in mechanized production of most of the crops that have been produced in recent years. It is a little difficult to separate mechanical production of cotton from mechanized production as it affects the entire Georgia farm operation.

We have had the usual trends in this state that have been common to most of the other states. To illustrate, in 1945 we had 24,648 tractors on Georgia farms. In 1950 this number had increased to 60,991; in 1952 it had increased to 81,400.

The percentage of Georgia farmers with tractors in 1940 was only 3.8. In 1945 it was 9.0; in 1950, 24.4; and in 1952, 45.4 percent of all Georgia farmers operated tractors.

The trend of increase in other mechanical equipment has been similar to the increase in the number of tractors. For example: combines increased from 3,600 in 1945 to 11,500 in 1952. During the period 1945 to 1952 there has been an increase of 900 percent in side-delivery rakes and motor trucks on farms increased from 34,700 to more than 74,000.

The use of mechanical cotton pickers in Georgia has been somewhat sporadic and unstable. During the last five years the number of mechanical cotton pickers has ranged from a half dozen to approximately 75 at the present time. The acreage harvested by individual pickers has varied from 10 or 15 acres to 200 acres.

The acreage harvested by most of the pickers in one season has been rather small. Some planters have used the mechanical picker as a method of obtaining hand pickers more easily and at a more reasonable price.

The problem of defoliation is one that we have not yet licked. Application of defoliant with tractor equipment has not in many cases given satisfactory defoliation. Application of defoliant with airplanes has brought up many difficult problems in many cases; even where the fields are not small it has not been satisfactory to defoliate large areas at one time due to the rather quick appearance of a second growth of leaves, which cannot be removed with any method of defoliation available at the present time. A large percentage of our gins are not yet properly equipped to handle mechanically picked cotton satisfactorily.

To add to the problems of cotton production, manufacturers of mechanical cotton pickers have not in many cases supplied the purchaser of such equipment with engineering assistance sufficient



By E. C. WESTBROOK

Extension Agronomist
Georgia Agricultural
Extension Service, Athens

cient to make the mechanical picker operate properly. In many cases the dealers who have sold farmers such equipment know nothing about it themselves, and farmers in some cases have been unable to obtain engineers with sufficient knowledge of operation of the

(Continued on page 34)

WHAT IS ROTOFIL?

ROTOFIL is a new system for direct solvent extraction of cottonseed and other seeds not readily processed in conventional soybean extraction equipment. It is the product of Blaw-Knox development of the Southern Regional Research Laboratory research in seed extraction. It complements the well known **ROTOCEL** system which is operating in many modern plants for solvent extraction of soybeans and cottonseed press cake.

In this new process, cottonseed or other seed is prepared for extraction in equipment identical to that used in preparation for hydraulic pressing. For this reason **ROTOFIL** appeals especially to cottonseed processors now using hydraulic presses.

ROTOCEL

Outstanding in application to soybeans and press cake because:

- * Less residual oil
- * Less steam and water required
- * Less maintenance
- * Filtration of miscella is eliminated
- * No vapor scrubbing required

ROTOFIL

Outstanding for direct extraction of cottonseed because:

- * System accepts cottonseed meals containing fines
- * Finished meal is substantially free of GOSSYPOL
- * Extraction rate is more rapid, more dependable
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• Georgia FFA Cotton Awards Presented

AWARDS to winners of the Georgia FFA one-acre cotton contest for 1952 were presented Oct. 25 at the state FFA rally at Macon, J. E. Moses, Atlanta, secretary, Georgia Cottonseed Crushers' Association, reports. Winners in the contest attended the national convention of Future Farmers in Kansas City.

The winning boys, with their chapter and yields, are as follows: Kermit Brinson, Whigham Chapter, yield 2,734 lbs.; Gene Lee, Glennville Chapter, yield 2,678.5 lbs.; J. D. Durham, Banks County High Chapter, yield, 2,562.7 lbs.; Jerry Ferguson, Dallas Chapter, yield, 2,345.8 lbs.

L. E. Baker, advisor of the Daniels-

ville Chapter, Danielsville High School, was the winner of the chapter award. His record shows 33 of the 42 members of the chapter participating in the contest, with 32 of these turning in individual reports and an average yield of 1,153 pounds of seed cotton per acre. They scored 100 percent on the use of recommended practices as to fertilization and poisoning.

Many Plains Farmers Are Putting Burs on Land

Many farmers on the South Plains of Texas are returning their cotton burs to the soil this season, according to reports from ginners and County Agents. Earl Hobbs, Hobbs Gin, New Deal, estimates that 75 percent of the burs from all

cotton ginned there are being hauled back to farms.

"Getting the burs away from the gin serves a double purpose," says Dave Sherrill, Lubbock County Agent. "It will add humus to the soil and removes a fire hazard at the gin."

Orville Bailey, ginner at Roundup, Hockley County, has a special trailer built with a manure spreader chain to dump the burs which is being used, and agrees the hauling of burs away from gins is helpful to ginners as well as to growers who use them on their farms.

Mother of Mill Manager Dies at Rocky Mount

Mrs. Jacob Ellsworth Lambert, mother of J. E. Lambert, Jr., manager, Southern Cotton Oil Co., Rocky Mount, N. C., died Oct. 26 at the home of her son in Rocky Mount. She was the former Lilla Belle Garner and was born in Carroll County, Md., March 17, 1866. Funeral services were held Oct. 27 with burial in Pineview Cemetery.

She is survived by her son and two daughters, Mrs. Annabell Ross, Nashville, and Mrs. Etta L. Koons, Los Angeles.

Cotton Linters Exports From U. S. Increase

Exports of cotton linters by the U.S. during August totaled 3,285 bales compared with 787 bales in August 1951, USDA reports. Imports of linters amounted to 21,125 bales during August this year.

During 1951-52, the U.S. exported 271,000 bales of linters compared with 112,000 in 1950-51. Cotton linters imports for the year were 113,000 bales, including 51,000 from Mexico, 30,000 from the Soviet Union and 21,000 from Brazil.

Son of Harry Hodgson, Sr. Dies Oct. 22 in Atlanta

Robert Bishop Hodgson, youngest son of Harry Hodgson, Sr., cottonseed crusher, Athens, Ga., died Oct. 22 at Emory University Hospital, Atlanta. Services were held Oct. 24 with burial at Athens.

He is survived by his father, wife, one daughter, two sons, two sisters and two brothers.

More Farmers Do Part Time Work in Industries

A larger proportion of America's farmers are doing off-farm work than at any previous time on record. USDA economists say that over 24 percent of the nation's farmers work more than 100 days per year off the farm.

This compares with half as many—only 12 percent—in 1929. This figure has been increasing steadily since that time, except for a slight drop in 1934. Farmers in many sections of the country have taken jobs in local industries during their "off months" to supplement their incomes during these times.

Surprisingly enough, the percentage of farmers doing off-farm work between 100 and 249 days per year has decreased since 1939, while the percentage working more than 250 days per year has greatly increased.



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DEMONSTRATING the use of siphons in row irrigation at the Shafter Cotton Experiment Station on Oct. 23.

CG&MPress Photo.

Mechanization Conference Report

Management and Costs In Irrigation Farming

By Dr. H. R. WELLMAN

■ Extracts from address delivered at the Sixth Annual Cotton Mechanization Conference, Bakersfield-Shafter-Fresno, Calif., Oct. 22-25, 1952.

IT IS QUITE appropriate that this Cotton Mechanization Conference devote some of its attention to the subject of irrigation. As a matter of fact, one might say that we are meeting here today in Bakersfield *because* of irrigation. I can assure you that without it, there wouldn't be any cotton in Kern County to bring you here! Irrigation, as we shall touch upon later, goes hand in hand with mechanized farming. Moreover, As I am sure you all know, irrigation is a major factor in California's consistently high cotton yield which brings our industry to a position that commands your attention.

It is fair to say that the development of the West has come about by irrigation. Bringing water to the land has allowed us to farm arid regions in which agriculture would otherwise be impossible. In many areas it permits us to take advantage of warm forcing climates that give us bountiful and early crops. It has made possible, during a longer period of the year, a wider variety of food products for the entire nation, raising our plane of living and of nutrition. By use of irrigation the farm manager is able to combine his enterprises in a stable yet flexible kind of farming system. In addition, he can be assured of high yields resulting from an intensive type of agriculture. And,



Dr. H. R. WELLMAN is Vice-President, Agricultural Sciences, University of California, Berkeley.

most important, the farmer can operate with a degree of certainty which would otherwise be lacking. It is this last factor that enables him to produce high-cost and "expensive" crops, the production of which might otherwise be too risky for fear of a loss through lack of rainfall. Most pertinent to this meeting, irrigation farming is often advantageous to mechanization.

The ever increasing importance of irrigation to the economy of the 17 West-

ern states can best be seen in the tremendous growth of capital investment in irrigation works and the corresponding increase in land under irrigation during the last decade. Between 1940-50 there were close to \$800 million spent on irrigation works which almost doubled the total capital investment. About 4½ million acres of new land were "brought under water." This brought the total acreage of directly irrigated lands up to almost 25 million acres.

The greatest development took place in Texas where there was a 200 percent increase in irrigated acreage from a million acres in 1940 to more than 3 million in 1950. California showed the second largest increase: 20 percent, from 5 million to over 6½ million acres. The third largest increase was in Arizona which now has close to one million acres of irrigated land.

While the benefits of irrigation are real and recognized, its use brings some special problems to the farm manager. In the first place, he must decide whether he can organize his patterns of production so that irrigation will be both manageable and profitable. There must, of course, be a constant supply of available water sufficient to meet the requirements of those crops that are selected as part of the farm organization plan. As you know, individual crops vary considerably in their water requirements—for instance, rice needs 48 to 96 inches a year while cotton requires half this amount. Regularity and adequacy of water supply are becoming more and more of a problem as the drain on water resources is developing in many parts of the West. Another possible limitation is the quality of the available water. In parts of the heavily irrigated San Joaquin Valley of California the water table has receded. Greater and greater depths have to be tapped by farmers wishing to use the available water supply. Some of this deep well water contains sodium salts which hamper successful crop growth. To offset this limitation, soil conditioners are needed, leading to a significant increase in the cost of crop production.

The farm manager who wishes to use irrigation must also examine the limitations placed on water use by difficulties of drainage, problems of general soil porosity and other potential physical hindrances. These physical determinants are highly important; a manager or owner who overlooks them might have a handsome profit on paper only to find, when he attempts to execute the proposed plan, that his farm's soils are too porous, or that his water supply is too alkaline to be used, or some other such unforeseen difficulty occurs.

Above all, he must be sure that he has a right of access to water. In the West these rights are often complex and confusing. Any farm manager considering the use of irrigation must acquaint himself with the particular water laws in his area.

However, while specific physical and legal factors are important, the manager frequently has his range of possible alternative patterns of production curtailed by his over-all environment. The system of markets, climatic conditions, soil types, and so forth limit his operational framework so that his degree of success or failure depends on his managerial efficiency within a given operational framework. It is within this framework that the efficient manager

(Continued on Page 34)

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FLAME CULTIVATOR operating on a Georgia cotton farm.

Mechanization in Georgia

(Continued from Page 28)

mechanical pickers to put them in shape to do a satisfactory job. This situation has been responsible for the mechanical picker making comparatively slow progress in Georgia.

Mechanical cotton choppers have been used only to a limited extent in Georgia.

The trend is more toward planting to a stand to eliminate chopping insofar as practical. Also, farmers are learning to do a better cultivation job with tractor equipment. They have also gone through a period of trial and error in order to find out what equipment to use and how to adjust and operate such equipment so as to give the best possible job. The shortage of labor and the cost of labor for hoeing has given an incentive to farmers to do the best possible cultivation job and real progress has been made in recent years in this respect. Large farmers have trained tractor operators who do all of the cultivating. They no longer leave the cultivating to whatever labor might be available for the moment.

There has been an increase of rotary hoes and also improvement in the operation of this useful piece of equipment. Many of our farmers who have purchased rotary hoes still do not know how to operate them properly.

Chemical weed control is now beginning to be tested sufficiently to provide information needed by farmers in controlling the early growth of weeds and grass. It is generally recognized that when and if chemical weed control is developed to the extent that farmers can take it and use it successfully from year to year that it will do much toward completely mechanizing cotton production.

As we see it, agricultural institutions, organizations of all kinds can greatly benefit the farmer in the mechanization program by providing engineering know-how to farmers, by providing schools to instruct farmers in the use of mechanical equipment they will not only speed up this program, but will greatly improve efficiency of much of the equipment now in the hands of unskilled operators.

The tone of some of this article may

sound unduly critical. However, what criticism there may be we have intended to be constructive and are merely trying to point out some of the needs in the mechanized program. The trend toward mechanization, as we see it, will continue whether we like it or not. Farmers are being forced by the course of events to decrease production costs and to increase production per worker. Mechanization offers these opportunities. Therefore, the more farmers are schooled in the care of equipment, in the repair and in efficient operation the mechanization program will go forward more rapidly and will give greater returns. The program should provide for those who invest their money in equipment and who are dependent on its successful operation to provide the major farm income.

Irrigation Management

(Continued from Page 32)

endeavors to establish the best possible balance between costs of production and physical environment—always with an eye on the prevailing cost-price relationship of whatever crops or livestock products he produces.

Irrigation farming is costly; there is no doubt about this. Initial investment is high and while the amount depends on the nature of the irrigation equipment used, in general, initial investments are sufficiently large to make overhead or fixed costs such as depreciation, interest and taxes an important part of all costs in irrigation.

Some idea of the importance of these fixed costs can be gauged from four studies that have been conducted in the Western states. In the Texas high plains the first outlay for the developing and equipping of new irrigation wells was between \$4,000-\$5,000 per pump and overhead costs here ranged between 40 and 60 percent of the total operating cost of the pumps. In the Willamette Valley of Oregon, where sprinkler systems are used for vegetable growing, overhead costs range from 40 to 50 percent of total costs as a result of heavy investments in pipelines for sprinkling.

Equipment costs in the Willamette Valley averaged \$58 per acre.

In the San Joaquin Valley of California, it was found that a "typical" farm producing cotton and potatoes had fixed costs chargeable to irrigation that were around 40 percent of the total fixed cost of the farm operation. The initial expense for a pumping plant and a concrete underground distribution system averaged around \$115 per acre. A further example that emphasizes the high initial costs in the use of irrigation is seen in the costs of preparing fields for use as permanent, irrigated pasture. In the Sacramento area of California preparation of land for irrigation costs around \$110 an acre; leveling of the land alone accounts for one-half of this cost.

Since overhead costs contribute so much to the total costs and since these costs are fixed, whether the irrigation equipment is used or not, the farm manager must make maximum use of his equipment so as to produce his crops at the lowest possible average cost. Equipment which is not fully used only adds to unit costs of production—as does equipment which is too "large" to be fully effective. A survey made in the San Joaquin Valley underlines the importance of full use of equipment as well as the importance of suiting it to the scale of operation. It was found that with comparable farm organizations producing cotton and potatoes, the crop-acre costs for use of irrigation equipment declined as the size of the farm increased from 80 acres to 320 acres. However, beyond 320 acres this study showed that overhead costs of irrigation (per crop acre) remained fairly constant. In all instances the estimates were premised on the optimum use of the "correct" type of equipment; but even so, average costs declined from \$17 per acre on an 80-acre farm to \$12 per acre on a 320-acre farm. It was also found that no matter what the size of the equipment or the size of the farm, the more the equipment was used the lower the unit-costs of production ascribed to fixed irrigation equipment.

The annual cost of water for irrigation varies greatly, even for the same crop within a given locality. A recent study revealed that water costs in citrus orchards in Los Angeles County averaged \$23 per acre, ranging from a low of \$6 per acre to a high of \$80 per acre. In almond orchards in Stanislaus County the average water cost was \$5 per acre, with a low of less than \$1 per acre to a high of \$11 per acre. In the same county the cost of water for tomato production ranged from \$7 per acre to \$19 per acre.

One of the advantages of irrigation is increase in yields per acre. And increases in yields per acre are generally accompanied by reduction in costs per unit of output. A good example is machine picking in cotton harvesting.

It has been found that the yield per acre has a definite bearing on the cost of machine picking per bale; when a harvester picks 200 acres a season the cost of picking a bale is about \$24.50 when the yield per acre is $\frac{3}{4}$ of a bale. However, when the yield is $1\frac{1}{4}$ bales per acre the cost of picking a bale is about \$14.75; when the yield is $2\frac{1}{4}$ bales per acre the cost is only \$8.20 a bale. Thus an increased yield of half a bale per acre saves \$10 per bale in picking costs, and a further increase in yield of one bale per acre saves an additional \$6.50

in picking costs per bale. The advantage of high yield is plain.

There are other reasons why a manager might find increased mechanization to his advantage when operating on an irrigated farm. With irrigation he can plan his calendar of farm operations fairly precisely and so be able to utilize his equipment as fully as possible, thus reducing the fixed costs of unit production that would otherwise be high if machines were to remain idle. This idleness of machines is one of the hazards that the dry land farmer must contend with, particularly if the rains come too late, too soon, or not at all.

From the standpoint of development of arid and semi-arid regions the greatest gain from irrigation is the production of types of crops which would not otherwise be possible. The pattern of crop production in California, for example, is today vastly different from that which existed at the turn of the century. Then California was mainly a grain and livestock producing state. Although production of fruits and vegetables was getting well underway by 1900, the aggregate volume amounted to only a fraction of the huge total which now flows annually from the farms of this state. The great rice and cotton industries of the state are of comparatively recent origin. It is not, I think, an exaggeration to say that irrigation is the "life blood" of California's agriculture.

It must not be supposed, however, that the great benefits of irrigation are without cost. I have already mentioned the large capital investment required by individual farmers. Then too, there is a large government investment in many projects such as the Central Valley Project. Government investment is generally accompanied by government control, and government control may impair efficiency in farming operations. The 160-acre limitation is a case in point.

Society must also count the cost of the dislocations which extension of irrigation farming may bring about. Readjustment is necessary when an old established area loses its hitherto "natural" advantages as irrigation brings new areas into cheaper and more efficient production. The advantages of higher yields and increased mechanization of preharvest and harvest operations have, for example, permitted the West to expand its cotton production. This expansion has had an impact on the Cotton South. That important area of our country will have to readjust to the new conditions. In fact readjustment is already underway.

In many areas, another "cost" of irrigation farming, and indeed the limitation of it, is the growing shortage of water, and the competition between agriculture and industry for the water that is available. Aside from industrial needs, California agriculture is already feeling the pinch of water shortage.

In a study of the structure of agriculture in the Antelope Valley of Southern California, the State Water Resources Board lists 300,000 acres in this valley as irrigable, while, in point of fact, there is only sufficient water, from all sources, to provide for the irrigation of 20,000 acres of land. Overdraft here, as in other parts of the state, has resulted in lowered water tables, increased pumping costs and gradual depletion of ground water resources.

The ultimate limitation of irrigation

farming may come from what happens to the soil itself, rather than from any shortage of water. In making this statement, I am not thinking of the next 25 years or even the next 50 years, but about the next century and beyond. Modern irrigation is still relatively new. What it does to soil structure and chemistry is poorly understood. Can irrigated agriculture be maintained on the land for another 100 years, or 200 years, or 500 years? What is happening to the soil? We are not even sure that continuous irrigation changes the soil or has inherent disadvantages that one day must be overcome, but we suspect so. To study this problem, among others, the University of California last year established the Kearney Foundation of Soil Science which will concern itself with the problems of arid and semi-arid soils.

The effect of irrigation on the soils will be of major concern in these studies, which we hope will extend into the indefinite future.

Meanwhile, agricultural scientists will continue to study the methods of irrigation farming, the agricultural economists like myself will assess the problems of cost and management, but the farmer, quite rightly, will reach his own conclusions as to when and how he shall bring his land under water, with better returns as always, accruing to the good manager.

• Average annual rainfall in Tulare County, Calif., ranges from 9.06 inches up to 37.19 inches in Sequoia National Park. Elevation ranges from 208 feet to over 8,000.



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As Viewed from The "PRESS" Box

• Drouth Losses Continue

DROUTH continued to dominate the agricultural picture during the first week of November, as it has during most of 1952 and for as long as three years in some localities. Many states of the Cotton Belt and Midwest report that the current dryness exceeds in length of duration and seriousness any other drouth on record.

Resulting from the drouth is the forest fire situation which Richard E. McArdle, Washington, chief forester of the U.S., describes as the greatest forest fire danger in the nation's history. Varying losses, ranging from heavy to spotted, are reported from practically every state of the South and Southwest. W. R. Hine, Tennessee assistant regional forester, reports that it will take 100 years to replace timber that has burned in that state, and Henry T. Crosby, chairman, Delta Council forestry committee, warns that more than 1,500,000 acres of Mississippi Delta woodland are endangered by the constant threat of severe fires.

Representative reports on lack of rainfall include that from Dallas that October was the driest period for the month on record, with the records going back for more than 60 years. At State College, Miss., total 1952 rainfall through September was 23.81 inches,

about 17 inches below the normal for the first nine months of the year; and similar reports of below normal precipitation come from most of the Cotton Belt and such Midwestern states as Kansas, Iowa, Nebraska and Missouri.

Shortages of range and pasture feeds, forced marketing of culled animals and breeding stock, and drying up of stock water sources, accompanied by rationing of water for city dwellers in many places, are some of the results of the situation. Fall crops are being "dusted in" by many farmers with their future progress to be determined by rains that were not yet in sight as this was written.

• No Pink Bollworms Found

TRASH INSPECTIONS at about 200 Mississippi gins during October failed to reveal any pink bollworms, the State Plant Board announced Nov. 1. Center of the search was the Delta and southwestern counties bordering the Mississippi River, although some gin trash inspections also were made in other areas.

• Protest Bracero Wages

MANY COMPLAINTS about the wage requirements for Mexican nationals harvesting cotton continue to be heard from farmers on the South Plains of Texas.

More than 200 farmers attended a meeting in Lubbock Oct. 29 to protest Department of Labor action setting the prevailing wages for braceros pulling cotton at \$2 per hundred pounds. The producers said that they were paying Americans \$1.50 for the same labor and had been paying Mexican nationals \$1.55, in addition to providing living quarters in conformance with contract requirements.

• Carryover Quality Low

QUALITY of the 1952 cotton carryover is much lower than usual, USDA reports. The grade index is the lowest for any carryover since 1940, when the index was first computed. The average staple length is the shortest for any carryover since 1946. Cotton that is untenderable in settlement of futures contracts totals about 1,034,000 bales, or about 38.8 percent of the entire carryover, a record high for the percentage of untenderable cotton in the carryover.

• Dallas Not That Dry

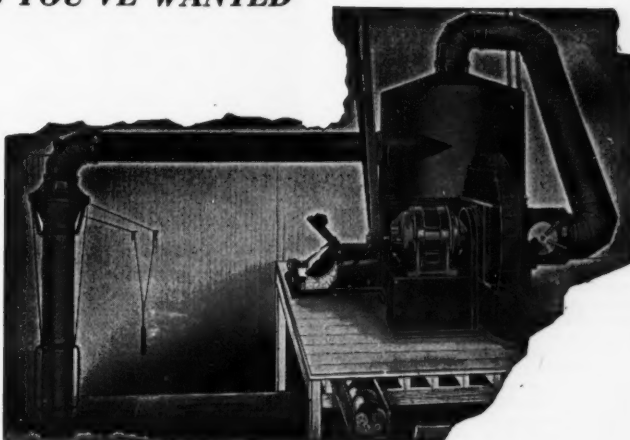
AMERICANS can always find something to laugh about, even in a situation as serious as the current drouth. Among the recent lighter sides to the drouth is the tale of the luncheon club speaker at water-rationed Dallas who brought his own canteen of water when he came over from — of course — Fort Worth. And then, there's the farmer who, when asked how much rain he wanted, said that he hoped it would rain five inches that day, three inches the next day, and continue to drizzle until it dried up. It is not true as reported, however, that it is so dry in some areas that the trees are chasing the dogs.

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Blaw-Knox Equipment in Use at Lubbock Mill

Now in successful operation at Lubbock, Texas, is a new type of plant designed for the solvent extraction of prepressed cottonseed cake to produce a high yield of superior quality cottonseed oil and meal.

Designed and built by the Chemical Plants Division of Blaw-Knox Construction Company, the plant is installed at the Lubbock Cotton Oil Company and is said to be processing well in excess of its nominal capacity of 200 tons of seed per day.

Employing the Rotocel Extractor and the Blaw-Knox vapor desolventizer, the plant extracts coarsely ground cake to produce a bright granular meal with a residual oil content maintained well under the guaranteed maximum of 0.5 percent.

"The plant is notable for its compactness and ease of operation," the manufacturer states. "The extraction plant proper stands on a slab 50 by 40 feet and is not housed. There are only two major operating levels and the highest point is 45 feet above the ground."

Henry Lee Kight, Ginner, Dies in Dublin, Texas

Henry Lee Kight, ginner and cotton buyer, Dublin, Texas, died Nov. 1 in the Dublin Hospital, after having been active in the cotton and gin business for more than 50 years. Funeral services were held Nov. 2 in the First Baptist Church in Dublin.

He was born in Homer, La., Feb. 14, 1866, moving to Texas in 1874 with his family and settling near Ennis. He married Miss Alida Loree Duke of Granbury in 1891. After working with the MKT and Frisco railroads as telegrapher and as agent in Morgan, Stephenville and Bluff Dale, he entered the cotton and ginning industry. He took an active part in civic affairs, and was a member of the First Baptist Church, chamber of commerce and Dublin Development Club.

Survivors include his wife; a daughter, Mrs. J. Lincoln Lane, Dublin; a son, Max H. Kight, Denver, Colo.; four grandchildren and one great grandson.

Continental Gin Moves Bigham and Cagle

Announcement has been received from Continental Gin Company that effective Nov. 1, Ross Bigham was transferred to Dallas as assistant sales manager of the Western District with headquarters in Dallas. Bigham has represented Continental in the Phoenix, Ariz. area for approximately three years. Prior to that time, he was one of their representatives in the Lower Rio Grande Valley of Texas.

George C. Cagle, formerly Continental's representative in the Charlotte, N. C., area will succeed Bigham in Phoenix.

Cagle is employed by the Continental Gin Service Company, which is a totally owned subsidiary of the Continental Gin Company.

Shortening Shipments

Shipments of standard shortening as reported to the Institute of Shortening and Edible Oils, Inc. for the week ended Oct. 25 were 4,739,498 pounds.

Texas Queen of Cotton On Mexico City Trip

The 1952-53 Texas Queen of Cotton, 17-year-old Miss Tina Martinez of Dallas, left Nov. 6 for Mexico City, the first trip on a schedule which is expected to take her 3,000 miles during her reign. Miss Martinez was crowned Oct. 7 at ceremonies during the State Fair of Texas in Dallas. The date was also Texas Ginners' Day at the Fair. The Texas Queen of Cotton will be accompanied on the Mexico trip by her mother and Jay C. Stille, executive vice-president of the Texas Cotton Ginners' Association, her

sponsor. Miss Martinez will be honored in Mexico City by officials of the leading Mexican cotton firms and the American embassy.

World Lint Trade Gains

International trade in cotton during the 1951-52 season was slightly larger than in the previous season, USDA reports. World exports of 12.3 million bales were about 300,000 bales larger than in 1950-51. Increases of about 700,000 bales in exports to India, France, China, Spain and Portugal more than offset decreased exports to nearly all other countries.



1953 Georgia Maid of Cotton Selected

CHRISTELLE TAYLOR (above), from Alma, Ga., was selected as the 1953 Georgia Maid of Cotton Oct. 22 in Atlanta at the final event of the statewide contest to select Georgia's entry in the national contest. The contest was sponsored by the Georgia unit of the National Cotton Council composed of the Georgia Cottonseed Crushers Association, Cotton Ginners Association, Cotton Manufacturers Association, Cotton Merchants and Shippers Association, Farm Bureau Federation and Warehouse and Compress Association. J. E. Moses, Atlanta, secretary of the crushers association, was chairman of the Georgia Maid of Cotton Committee and B. M. Prance, Atlanta, was secretary.

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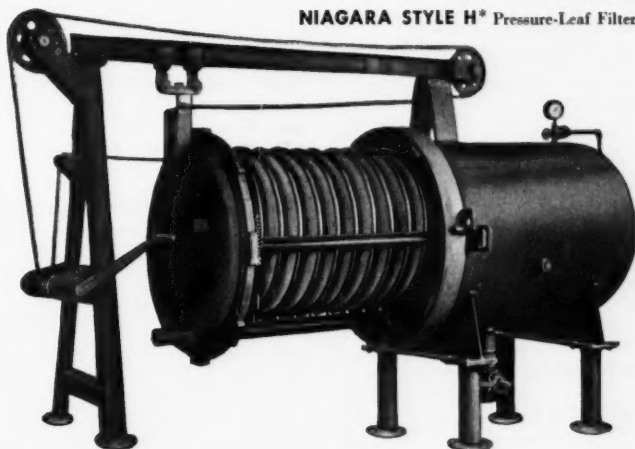
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International Harvester Buys Hough Company

John L. McCaffrey, president of International Harvester Company, Chicago, has just announced that Harvester has acquired the stock of The Frank G. Hough Co. of Libertyville, Ill., manufacturers of earth-moving, excavating, and material handling equipment.

Effective Nov. 1, McCaffrey said, the Hough Company became a wholly owned subsidiary of International Harvester.

"The Hough Company's products, including its widely known Payloaders," McCaffrey said, "will effectively supplement our current line of industrial power and earth-moving equipment."

"We will operate the Hough Company as a wholly owned subsidiary, with no immediate change in the organization of

the company. We feel we are particularly fortunate in having Frank G. Hough continue as president of the subsidiary company, directing the activities of the business which he has built up."

The Hough Company now has approximately 675 employees. Its facilities at Libertyville include a modern factory with 300,000 square feet of floor space located on a 110-acre site. The company was established in 1920.

Report on Cotton Ginning

Number of bales of cotton ginned from the growth of 1952 prior to Oct. 18, 1952, and comparative statistics to the corresponding date on 1951 and 1950.

State	Ginning (Running bales— linters not included)		
	*1952	1951	1950
United States	**8,558,938	**8,333,691	**4,869,675
Alabama	708,451	757,070	385,752
Arizona	201,349	121,648	141,063
Arkansas	854,857	664,656	422,708
California	370,418	368,826	223,796
Florida	15,349	17,175	7,849
Georgia	585,981	760,074	394,223
Illinois	384	205	37
Kentucky	2,954	1,597	834
Louisiana	606,580	584,096	315,503
Mississippi	1,453,087	1,197,795	835,363
Missouri	241,472	154,271	67,945
New Mexico	118,165	69,119	49,650
N. Carolina	278,931	309,449	98,240
Oklahoma	150,416	165,431	46,902
S. Carolina	454,065	646,083	339,403
Tennessee	397,204	280,873	137,258
Texas	2,125,479	2,237,176	1,411,868
Virginia	8,846	4,147	281

*The 1952 figures include estimates made for cotton gins for which reports were not obtained in time for use in the preparation of this report. The Bureau found it necessary to collect figures on cotton ginnings prior to Oct. 18 by mail and reports were not received for all cotton gins in areas where cotton had been ginned.

**Includes 176,356 bales of the crop of 1952 ginned prior to Aug. 1 which was counted in the supply for the season of 1951-52, compared with 223,566 and 285,243 bales of the crops of 1951 and 1950.

The statistics in this report include 13,480 bales of American-Egyptian for 1952, 5,303 for 1951, and 7,401 for 1950.

The statistics for 1952 in this report are subject to revision when checked against the individual returns of the ginner being transmitted by mail. The revised total of cotton ginned this season prior to Oct. 1 is 5,708,588 bales.

Consumption, Stocks, Imports, and Exports—United States

Cotton consumed during the month of September 1952, amounted to 736,248 bales. Cotton on hand in consuming establishments on Sept. 27 was 982,134 bales and in public storage and at compresses 4,002,082 bales. The number of active consuming cotton spindles for the month was 20,041,000. The total imports for the month of August 1952, were 7,797 bales and the exports of domestic cotton, excluding linters, were 106,853 bales.

Esso Standard Oil Honors Auguste L. Saltzman

Auguste L. Saltzman, 316 Lawn Ridge Road, Orange, N. J., assistant manager of the Solvents Department of the Esso Standard Oil Company, was honored on his 30th anniversary with the company.

He was presented a service emblem with two diamonds by J. C. Frendlich, manager of the Solvents Department, at a recent sales meeting.

Saltzman joined the company in 1922 as an assistant in the Lubrication Engineering Department at the Bayway Refinery. The following year he was transferred to the New Jersey Sales Division where he was subsequently promoted to various positions in this field. In 1945 he was advanced to his present position as assistant manager of the Solvents Department.

Saltzman was graduated from Lehigh University, Bethlehem, Pa., in 1922 where he took a science degree in me-

chanical engineering. He is a past president of the New Jersey Oil Trades Association.

Lint Holding Plans Speed Up Urged

ACCELERATION of the movement for orderly marketing of 1952 cotton and changes in the CCC loan program were among recommendations made at Memphis, Oct. 31 during an all-day hearing before a cotton subcommittee of the House Committee on Agriculture. The hearing was called at the request of the Beltwide Cotton Producers Committee in order to call attention to the price decline during the cotton marketing season.

Dr. C. R. Sayre, Scott, Miss., is chairman of the Beltwide Committee which presented a large number of producer witnesses at the hearing. Representative Tom Abernethy of Mississippi served as chairman of the House subcommittee.

Specific action will have to be taken by producers, Department of Agriculture agencies, private banks, mills and others to make the program effective in the shortest possible time, it was pointed out during the hearing; and farm organizations, producers and the USDA were urged to emphasize the slogan, "Sell a Bale and Hold a Bale."

Set Deadline for Plains Cotton Maid Contest

Nov. 17 has been set as the deadline for entries in the South Plains of Texas Maid of Cotton Contest, with the winner to be selected at Lubbock Nov. 24. Roy Forkner, Canyon ginner, has been re-named chairman of the contest committee, and Otice Green, Lubbock Chamber of Commerce, is secretary.

The winner in the contest must be a resident of the South Plains and meet qualifications required in the national contest, sponsored by the National Cotton Council. She will receive an all-expense trip to Memphis to compete in the national competition, Dec. 29-30.

Fire Ends 41-Year Old Ginning Operation

Fire destroyed the G. W. Scoggins Gin at Fouke, Ark., on Oct. 23 and wrote "finis" to a continuous ginning operation that began in 1911. In that year the late G. W. Scoggins built a 4-70 Pratt steam plant at Fouke and in 1914 he added Pratt 4-80's. The 4-70's were later sold.

The gin, which was completely destroyed by the Oct. 23 fire, was owned by G. W. Scoggins' widow and three sons—Raymond, Monroe, and Leroy Scoggins. "My father was a charter member of the Arkansas Ginners Association," Raymond writes, "and an early member of the Texas association. He or our family have been on your subscription list since I can remember, and I am now 47 years of age. I have no plans for rebuilding," he goes on, "but it will be hard to stay out. We have ginned close to 100,000 bales on this site."

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A cotton seed is a tiny thing—no larger than a kernel of corn. Yet out of its meaty heart comes the major ingredient of many of our finest foods.

Any housewife will tell you that snow-white vegetable shortening, with its delicate, appetizing texture, is far and away her favorite. It blends smoothly to make tender cakes and pastry, heats without smoking to fry digestible dishes, and keeps almost indefinitely without refrigeration.

America's favorite salad oil is also a cottonseed product; and its uses extend far beyond mere salad making.

Golden margarine matches *any* spread in flavor and nutrition; its low cost makes it easy to use generously at the table and for cooking.

Add them up—the cakes and pies, biscuits and breads, cookies and croquettes, salads and sauces, all the good things made with vegetable oil products—and you'll agree that some of our best eating comes from one of nature's smallest packages, the tiny cotton seed.



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The perfect balanced cotton. Exceptionally high yields and good gin turnout. Big, easy-to-pick bolls. Uniform staple length—high tensile strength—excellent mill performance. Adaptable to almost any soil.

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• Expect Slight Rise In Lint Carryover

A SLIGHT INCREASE in the carryover of U.S. cotton at the end of the current season is forecast by USDA-BAE in the 1953 outlook issue of "The Cotton Situation." The report says that disappearance of cotton in 1952-53 will probably be about 14,000,000 bales, approximately 800,000 bales smaller than last season. Since 1930-31, disappearance has exceeded 14,000,000 bales in only five seasons, three of them since 1948-49.

Domestic consumption of cotton in 1952-53 will probably be about 9.5 million bales, moderately more than the 9.2 million bales of last season. This estimate is based on the prospect that economic activity and purchasing power will increase moderately over 1951-52 and assumes that international tensions will show no significant change. The daily rate of cotton consumption declined during the first few months of 1951-52 in contrast to the usual seasonal rise, but is expected to show a more normal upward trend during the current season. The rate during August and September 1952 was 99 and 102 percent of the rate in the same months of 1951. Trade reports indicate that substantial orders of gray goods for future delivery have been received by mills and that the excessive inventories of textiles, of 1951-52, have been reduced to more normal levels. The moderate but steady increase in gray goods prices since June also indicates that the textile market has strengthened, the outlook report says.

If there is no material change in the international situation, exports of cotton from the U.S. in 1952-53 are expected to drop from the 1951-52 level of 5.5 million bales to around 4.5 million. Stocks at the beginning of the current season in foreign, non-communist countries totaled about 2.2 million bales more than a year earlier. Production in this group of countries is expected to be about the same as that in 1951-52 and consumption probably will be no higher than last season. In general, the world situation indicates that the foreign carryover on Aug. 1, 1953, will be somewhat larger than that of a year earlier.

The U.S. supply of cotton in the 1952-53 crop year is estimated at about 17.2 million running bales, about 200 thousand bales smaller than the 1951-52 supply. This includes a crop of 14.3 million running bales (14.4 million 500-pound bales), a beginning carryover of 2.7 million, estimated imports of about 150 thousand, plus an allowance for "city crop" (rebaled samples).

Business Investments Set New Record in 1952

Business investments in plants and equipment during 1952 now are estimated at a total of \$27,500,000,000, 4 percent more than in 1951 and the largest on record, USDA reports. Defense industries show the largest increases over last year, while some of the non-defense industries show declines.

Scheduled expansion programs for basic metals, power, petroleum, chemicals, aircraft and some other defense-related industries probably will hold business investment at a high level well into 1953. However, the productive capacity of industry has been expanded rapidly since Korea and some reduction in total investment spending seems likely.

Shaw Cites Research Value To Future Agriculture

Research being done today will be a leading factor in determining agricultural production ten years from now, Dr. Byron T. Shaw, Washington, administrator, Agricultural Research Administration, USDA, pointed out in an address at the Naval Stores Experiment Station, Olustee, Fla., Oct. 29.

He cited many benefits to Florida producers of naval stores, farm crops and livestock resulting from past research including the development adapted varieties of sweet corn, development of fruit juice concentrates and others.

"Growers in North Florida have already reported yields as high as 20 bushels of soybeans per acre," he said. "Yet, until research developed new varieties of soybeans and the dusting materials to control insects, growing soybeans for oil was not practical in the southeastern states represented here today. Now I understand that some of the more optimistic growers are promising that they will give the Corn Belt a run for its money in producing soybeans."

Drying Equipment Loans Available to Farmers

Enlargement of the CCC program providing loans to farmers to finance the purchase of drying equipment for the conditioning of cottonseed, soybeans, flaxseed and other farm products has been announced by USDA. Information and loan application blanks are available from PMA county committees.

The original program, initiated in October 1949, applied only to mobile mechanical dryers. Under the enlarged program now announced, loans will be available also for purchase of mobile air-circulators, ventilators, tunnels and fans in an amount to be determined by PMA state committees, but the maximum amount of the loan may not exceed 75 percent of the delivered and assembled cost, exclusive of farm labor costs.

Loans will be made to groups of producers desiring to purchase drying equipment for joint use. Tenants and landlords, as well as owner-operators, are considered producers.

Loans will not be available for refinancing, repair, maintenance, or reconditioning driers and other equipment nor for the purchase of driers or equipment for use in connection with the conditioning of commodities which the borrower intends to purchase, store, or condition for others. Loans will not be available for any drying equipment which will become a permanent part of the storage structure.

Planting Seed Marketing Bulletin Published

"Marketing Cotton Planting Seed in Tennessee" is the title of Monograph No. 265 published in November by the Tennessee Experiment Station, Knoxville. B. D. Raskopf, associate agricultural economist, is the author. It includes information on the use of planting seed by farmers, dealer practices in handling cotton planting seed, cottonseed delinting plants, marketing of planting seed by farmers and other topics.

Allethrin Insecticide Is Now Widely Used

A report on the first full year of commercial production of allethrin shows that manufacturers marketed 50,000 to 60,000 pounds of the insecticide, which first was synthesized by USDA chemists in 1949. Future industrial production of the insecticide is expected to be 600,000 pounds annually, USDA says. Allethrin is a pyrethrum-type insecticide which gives quick kills of many of the common insects that annoy man, and as such has been used by the Army to protect its personnel from pests such as the malaria-carrying mosquito.

As allethrin production has expanded it has been available for use in many

American homes. Behind its development by USDA chemists lie more than 17 years of research. It required 15 years to determine the composition of the four major insecticidal compounds. USDA chemists spent another two years re-assembling the component chemicals in the right order to make allethrin.

Venezuelan Licenses for Lard Imports Removed

USDA reports that Venezuela no longer requires import licensing for lard imports, and has placed hydrogenated fats and oils in a new, separate classification of the customs tariff. The import duty on hog lard has been increased, however.

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Photoviews of Sixth Mc

Cotton Industry Leaders See Methods Used in Californ

■ 1—The crowd overflowed the bleachers and kept busy examining the equipment used in the demonstrations Oct. 23 at the U.S. Cotton Field Station at Shafter, Calif.

■ 2—The Shafter Station, with the cooperation of implement manufacturers, had assembled many modern machines, some of which are shown here.

■ 3—Not everything was so modern—this is an old two-row planter used by the Station in planting progeny rows in cotton breeding blocks.

■ 4—This self-propelled mechanical cotton topper attracted much attention from Conference visitors from other states. Topping experiments, through removal of the terminal bud, help to prevent lodging of rank growing plants, if done at the proper time, by causing the plants to become more rigid.





Mechanization Conference

San Joaquin Valley During Demonstration and Tours

■ 5—Shown in the foreground is a Till-N-Pack Culti-Packer used to break up clods, firm seedbeds and break crusts. The first machine in the rear is a modern two-row planter used in experiments at the Station.

■ 6—Another view of some of the equipment used in the Shafter demonstrations.

■ 7—"Reverse" on this equipment consists of a rope by which the operator turns the plow for this machine, used in the extensive irrigation experimental work which is conducted by workers at Shafter.

■ 8—The San Joaquin Valley tour Oct. 24 gave those attending the Conference a good view of the diversified farming operations, orchards, groves, vineyards and other agricultural enterprises. Final stop on the tour, before going to Fresno, was this winery near Cutler, operated by California Growers Wineries. Each visitor was given a basket of grapes and sample of the winery's product.



Grain Sorghums Second To Cotton in Texas

Grain sorghums now rank as Texas' most important grain crop and second only to cotton in total acres planted. An average of 6,835,000 acres were planted annually during the period from 1940-1949. Nearly 4,000,000 acres were planted for grain and the remainder for forage, including silage. The average annual production for the past five years has been about 90 million bushels, says Texas Extension Service.

As an aid to grain sorghum producers and others interested in the crop, agronomists for the Extension Service have recently prepared and released a bulletin on "Growing Grain Sorghums." Copies are available at county Extension offices.

Included in the bulletin are discussions on varieties, seed, chemical seed treatment, land preparation, planting, use of fertilizers, cultivation, irrigation, harvesting, diseases and storage. The bulletin in reality is a handbook on grain sorghum production.

Soybean Straw Should Be Saved for Cattle Feed

Mississippi County Agents are urging farmers to bale soybean straw after combining and to let livestock graze green stalk fields when harvesting is completed. Thousands of tons of straw have been saved to date, L. H. Moseley, district agent, Stoneville, Miss., reports.

With poor prospects for winter grazing in sight due to the continued drought, county agents are urging livestock pro-

Texas Co-op Ginners To Meet Feb. 9-10

It was announced this week that the annual convention of the Texas Cooperative Ginners Association will be held Feb. 9-10 at Galveston. E. M. Cooke, Georgetown, is executive secretary of the association.

ducers to take advantage of grazing available in stalk fields. There are many grassy fields that can be very valuable for the next two months if grazed, Extension workers point out.

In addition to utilizing soybean straw and stalk fields, the County Agents are prevailing on farmers not to graze new pastures too early when they come up after planting and to keep livestock off of fescue pastures until they have had a chance to put on sufficient growth to prevent winter killing from overgrazing.

They are also urging the planting of rye grass on established pasture sods, especially those containing white clover. Ryegrass, they say, can be planted until Dec. 1. Overgrazing of pastures this past summer and fall is likely to cause white clover to be the predominant plant in most pastures next spring. Too much white clover can cause serious bloat trouble. Ryegrass can help control much of the bloat in addition to furnishing heavy grazing for about four months in the spring, according to the county agents.

Corn Crop in Mexico to Set All-Time Record

The 1952 corn crop in Mexico is expected to reach an all-time high, with private estimates placing the crop at about 148,000,000 bushels, according to reports to USDA. This compares with the previous record of 135,000,000 bushels in 1951 and the prewar average of 68,000,000 bushels.

Despite the large corn crop produced in 1951, imports of about 900,000 bushels moved into the country during the first half of 1952, most of it in the month of May. It is believed that imports would not have been required if movement of domestic corn had proceeded normally. The imports came from the U.S. and were negotiated to encourage the release of hoarded domestic supplies and to help hold down the price of this important food, USDA comments.

At present corn stocks are reported adequate for all needs and, in view of the large crop in prospect imports are not believed necessary for the coming year. A downward trend in prices has been reported since March of this year. At latest report growers were getting the equivalent of \$1.47 per bushel for corn delivered in Mexico, D.F. There is considerable dissatisfaction with this price and some suggestion has been made that corn may be held in storage unless the official rate is raised to \$1.91 per bushel.

Storage for about 2 million bushels of corn now under construction, is expected to be in use by December. Construction of an additional 2 million bushels of storage is planned upon the completion of present building.

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Sincerely, Bob Hink
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Soybean Inspections for 1951-52 Set Record

Inspected receipts of soybeans for the crop year 1951-52 were the largest on record and amounted to 125,498 cars, according to reports to USDA. This compares with 124,697 cars inspected during 1950-51. September inspected receipts also reached a new high and amounted to 11,446 cars compared with 1,856 cars for the preceding month and 5,302 cars inspected for the same month in 1951. Included in the September exports were a large number of cars of 1952 crop soybeans.

The quality of the soybeans marketed in September increased slightly over a month ago, 76 percent grading No. 2 or better compared with 75 percent a month earlier. The quality was somewhat better than the soybeans marketed in September 1951. Of the receipts inspected during the 1951-52 season, 70 percent graded No. 2 or better compared with 78 percent inspected in the 1950-51 season.

Issue Ruling on Fire Loss Of Tendered Products

Information relating to fire losses on cottonseed products tendered to CCC which might occur prior to delivery by the crusher to CCC has been sent to oil mills in Texas, Oklahoma and New Mexico by C. H. Moseley, Dallas, Production and Marketing Administration, USDA. The legal opinion answers most of the

questions asked by crushers at a meeting in Dallas, Aug. 12, Moseley says.

The opinion, contained in a letter from Edward M. Shulman, Office of Solicitor, Washington, to George L. Pritchard, director, Fats and Oils Branch, PMA, deals with obligations of crushers to CCC in cases where fire destroys products before delivery.

Delta Council Board Meets

The mid-year meeting of the Delta Council board of directors will be held Nov. 19 at the Country Club, Indianola, Miss., J. R. Flautt, president, has announced. The meeting will be devoted to committee activities and recommendations to the directors and discussion of Council programs.

612 Attend American Oil Chemists' Meeting

Registration at the 1952 fall meeting of the American Oil Chemists' Society, held at the Netherland Plaza Hotel, Cincinnati, Ohio, Oct. 20-22, was 612. There were 20 exhibits by industrial firms, and a total of 39 technical papers. N. A. Ruston, Emery Industries, Inc. was general chairman, and R. C. Stillman, Procter and Gamble Company, program chairman.

Procter Thomson, Procter and Gamble Company vice-president of the Society, presided at the technical session on soap and detergency. Other chairmen were

A. O. Snoddy, Procter and Gamble, for urea complexes and oil modification; S. T. Bauer, Drackett Company for autoxidation; H. H. Nordsieck, and H. L. Craig, Procter and Gamble, for two sessions of general papers. W. O. Lundberg, Hormel Institute, Austin, Minn., served as reporter for the Journal of the American Oil Chemists' Society.

Stocks of Feed Grains on Oct. 1 Above Average

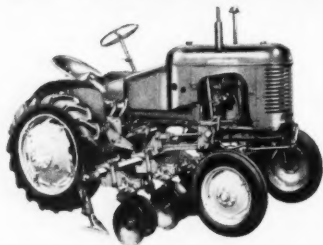
USDA reports for Oct. 1 show that stocks of corn and grain sorghums were above average and oats stocks only slightly less than the average for that date. The corn carryover of 489,000,000 bushels on Oct. 1 compared with 739,000,000 bushels a year ago and 845,000,000 two years ago, but was the fourth largest carryover of the past 10 years.

Oats stocks of over 1,100,000,000 bushels were slightly less than average, and compared with 1,186,000,000 a year ago and 1,210,000,000 two years ago. Grain sorghum stocks of approximately 10,000,000 bushels were much smaller than for the same dates of the past two years.

Wins 4-H Cotton Award

Robert Baird, Salem, N. M., will receive a trip to the National 4-H Club Congress, Chicago, Nov. 30-Dec. 4, as New Mexico's outstanding 4-H Club member in cotton work. The National Cotton Council is cooperating in presenting cotton awards.

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Massey-Harris 1-Plow Pony and Cotton Cross-Chopper

With a Massey-Harris Pony tractor and front mounted cross-chopper, you do a more accurate job, eliminate costly hand hoeing... take the hard work out of thinning cotton.

Five pairs of adjustable knife edged discs chop out the plants on 19-inch centers... leave your fields uniformly thinned for faster growth and bigger production.

Disc standards snap on and off the tool-bar with Massey-Harris Trigger Latch hook-up. It takes but a minute or two and you're under way. The same tool-bar also mounts a 2-row Runner-Planter for cotton or corn... or a 4-row peanut and soybean planter providing 3-way utility.

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If you have a problem involving horizontal, inclined or vertical movement of bulk material, Screw-Lift will give you a fast, clean, enclosed system that will save many man hours and pay for itself out of earnings.

Screw-Lift is a tried and proved tubular conveyor operating within a tube—engineered for full accessibility, with exclusive features that eliminate the possibility of clogging or degradation.

If your plant is cramped for space, Screw-Lift is just the thing, because it takes no more room than a pipe of comparable diameter. It provides for movement of material from floor to floor—to bins or processing machines, or to packers. Top or bottom drives with suitable feeds and discharge spouts arranged to synchronize with your processing procedure.

Write for Screw-Lift Form M-500-2 and companion Screw-Veyor Form M-600-2 to enable us to make recommendations.



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Gins can not afford to turn off the Statifier lint slide misting nozzles to make a comparative test for staple length of the same kind of cotton pressed without moisture, and pressed with Statifier moisture restoration. But when there is an electric power failure in a gas or diesel-powered gin a comparative test is made, as Statifier units use electric power.

Here is the PMA classing office report for 16 bales pressed without restoring moisture: There were 9-26's - 6-28's and 1-29.

Here is the PMA classification of 10 bales pressed after electric power was restored and 8 pounds per bale of Statifier wet water solution added: Dry, twisted fibers were straightened, there were no 26's - 5-28's and 5-29's.

This information is from Mr. Roy Forkner, owner of the Canyon Gin, RFD No. 1, Lubbock, Texas, president of the Plains Ginners' Association whose members will gin more than one million bales this season.

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Delta Group Sees Need for Livestock Pest Research

The need for research in the field of livestock pest control was emphasized at a meeting of the Delta Council livestock committee in Greenville, Miss., Oct. 27. Such research was urged in view of the growing concentration of livestock within the state and the increasingly serious losses caused by insects and insect-transported diseases.

One speaker outlined the drastic need for insect control research by recounting pest problems facing state livestock producers. He was Dr. H. E. Parish of Greenville, for many years of the Bureau of Entomology and now with a commercial insecticide company.

"We are due an outbreak sooner or

later that will deplete our herds if we do not initiate soon a complete insect control research program," Dr. Parish told the Delta Council committee. He called for a cooperative research program combining efforts of veterinarians, entomologists, and research specialists. He also said some systemized inspection of animals for diseases at sales barns was needed to prevent spread of contagious diseases.

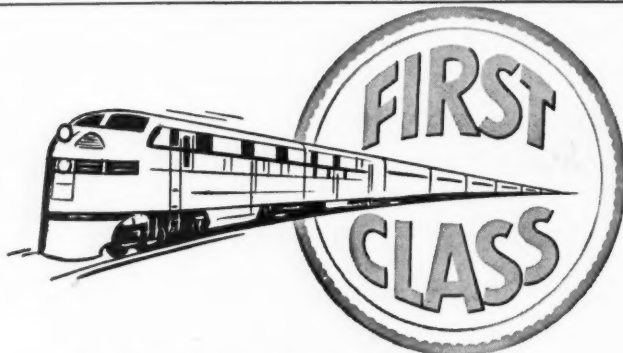
Dr. W. L. Gates, veterinarian of Clarksdale, discussed livestock diseases with the Council committee. He emphasized the part insect pests had in spreading stock diseases. Committee Chairman Harold T. Council named a sub-committee to work toward the establishment of an insect control research program.

In other discussions before the livestock committee, Dr. Peter Hogg, as-

sistant superintendent, Delta Branch Experiment Station, Stoneville, reported on the utilization of roughage for cattle feed. He said that in the present drouth emergency, use should be made of soybean straw and stubble for grazing and feeding. He said that even gin trash, together with a protein supplement, could be utilized as roughage.

Perrin Grissom, in charge of soil fertility at the Stoneville station, reported to the group on pasture and feed crop irrigation experiments. He indicated preference for flood irrigation wherever practical over sprinkler systems, declaring that they were in most cases more efficient and more economical. He also brought out that pasture grasses and legumes adapted to the specific season responded best to irrigation.

In discussion from the floor, William J. Klaus of Gary pointed out serious veterinarian shortages existing in certain areas of the Delta. He called on Delta Council and the Mississippi Cattlemen's Association to contact colleges training veterinarians to alert them to the need for graduates in the Delta.



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Farmers Buy Meat in Town, Do Less Butchering

The city dweller who has fond memories of hog-killing time on the farm might as well forget it. The modern farmer and ranchman is not doing much home killing, but buys his meat in town just as city folks do.

In 1919, 16,800,000 hogs were butchered on U.S. farms. In 1949—the last year reported in the 1950 census — only 7,369,000 hogs were butchered for home consumption and many of these were slaughtered and processed in frozen food locker plants. In 1919, cattle and calves butchered on farms numbered 1,905,000. By 1949, this number had declined to 1,267,000.

To the city dweller who pays big prices for meat, this may not make much sense. But it is a natural change brought on by the fact that ranching and farming are rapidly becoming specialized businesses. The slaughtering facilities of the big cities are now available to most farm and ranch people. They no longer have to make their farm a self-sufficient unit for producing most of their home food supply.

Drouth Aids Scientist Test Legume Crops

This year's drouth in Arkansas and elsewhere may have been a plague on farm and city alike, but at least one fellow has profited by it.

Dr. P. C. Sandal, University of Arkansas, Fayetteville, tested legume varieties to find those best adapted for pasture, hay, and cover and soil-improvement crops. He established test plots at the Experiment Station farm last March, using nine different varieties of red clover and 13 kinds of sweet clover. He expected to find out how well the various strains would grow under normal conditions but what he actually learned was how well each would stand up under one of the worst drouths in the state's history.

The test shows three sweet clover varieties — Madrid, Spanish, and an experimental strain called Wisconsin A-46 — stand out green against the brown landscape. A few others survived but growth was poor.

• 1953 Agricultural Outlook Is Good

THE FARM outlook for 1953 is good, Frederick V. Waugh, USDA-BAE, Washington, told the Thirtieth Annual Agricultural Outlook Conference in Washington, Oct. 20. Waugh said consumer incomes are high and we expect the domestic demand for food to continue strong.

However, he added that, while the next year's outlook is good, the squeeze between farm prices and farm costs is expected to continue in 1953 and probably will become more severe.

Defense expenditures may be approaching their maximum, and will begin to level off some time during the next year or two. When this happens, we should be at a very high level of economic activity and employment. Inflationary pressures may subside, and there might be some slight and temporary weakening in business investment and perhaps in consumer spending; including expenditures for food, Waugh said.

"Marketing charges are continuing to rise and some further increases are likely in 1953. Freight rates have increased several times since the end of the war, and there is new pressure to increase trucking rates. Wages in the food processing and distributing industries are still continuing to rise. A further rise in marketing charges would increase the squeeze both on farmers and on consumers," he added.

"Another adverse factor in the 1953 outlook is the drop in farm exports. Exports of farm commodities are already dropping, and further declines are expected during the coming year. This is due partly to an improved farm supply situation in other parts of the world, and age which makes it difficult for foreign partly to the continuing dollar short-countries to buy American products.

"Thus, we expect a further squeeze between farm prices and farm costs next year. The farm prices of some commodities dropped in recent months, notably the prices of beef cattle. The prices of some other farm commodities may decline somewhat in 1953. However, we do not expect any sharp drops in farm prices or farm income. This is partly because we expect consumer demand to remain high. Also, we have a strong price support program which would prevent any serious drop in prices of some of the major farm commodities. The investments in farm price supports are now relatively low, having dropped from 4.2 billion dollars in the spring of 1950 to 1.7 billion dollars in the summer of 1952. There is a real need for larger reserves of some farm commodities, such as corn, in order to insure against the normal weather hazards, and in order to provide a safe cushion of supplies that might be needed in connection with the defense program."

Arkansas Scientists in Panama for Research

Dr. Charles Lincoln, head of the entomology department, and Dr. E. M. Cralley, professor of plant pathology, University of Arkansas, Fayetteville, are in Panama to make a study of insect and plant disease problems. Before returning, they also will visit Costa Rica and Honduras.

More Broilers, Fewer Eggs And Turkeys Forecast

USDA expects production of broilers to continue to increase in 1953, but sees a prospective decline in supplies of eggs and turkeys during the coming year.

A slower rate of expansion of the broiler industry, however, is likely next year, after several years in which the annual rate of increase reached 25 percent. Turkey production is not expected next year to reach the level of 59,000,000 birds being produced in 1952. Egg production is forecast by USDA as smaller than during the current year, with the largest reduction likely in the spring months which normally have lowest egg prices.

U.S. Inedible Fats May Set Export Record

U.S. exports of inedible animal fats, greases and oils, other than tallow, in 1952 probably will exceed the record of 38,115 short tons exported in 1951, reports USDA. Exports during the first eight months of this year have been nearly twice the volume exported in the comparable 1951 period.

Western Europe, usually the major outlet for U.S. fats and oils exports, accounts for almost all the increase in exports this year. Italy and the Netherlands have been the major purchasers, but substantial quantities have gone to Switzerland and Western Germany.

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U.S. Points Way to Solve Textile Trade Ills

America's remedy for treating world textile trade ills—use of free enterprise methods to increase consumption in all lands—is already having its influence not only among textile industries overseas but also among some of the governments, states a report made by Robert T. Stevens, chairman of the American mission to the recent International Cotton Textile Conference in England.

Stevens told board members of the American Cotton Manufacturers Institute, major U.S. textile trade association, that the conference gave the first opportunity in textile history for putting forth a "blueprint" designed to accomplish maximum worldwide consumption of products and thereby increase world trade.

The conference, made up of delegates from countries which now produce 90 percent of all cotton textiles, formally accepted this principle, Stevens said, citing the efforts of the American delegation to put the idea across.

In the short time since then evidence has been received, particularly from western European nations, that textile interests are responding encouragingly to the American suggestions.

• World Production of Cottonseed Smaller

World cottonseed production during 1952-53 is tentatively forecast by the Office of Foreign Agricultural Relations at about 16.2 million short tons on the basis of the preliminary estimate of lint production. This would represent a decrease of 600,000 tons or almost 4 percent from the 1951-52 outturn, now revised to 16.8 million tons. However, it would be an increase of 6 percent from the 1935-39 average and 35 percent from the 1945-49 average.

The U.S., by far the world's largest

producer, accounts for 467,000 tons of the 600,000-ton decrease expected from 1951-52. Comparatively smaller but nevertheless significant decreases also are forecast for Mexico, China, and India. Sizeable increases from last season's crop are foreseen for Egypt, Pakistan, Turkey, Anglo-Egyptian Sudan, Iran, and Syria.

An official estimate of U.S. cottonseed production will not be made until final ginnings for the season are released. However, the Bureau of Agricultural Economics reports that if the ratio of lint to cottonseed is the same as the average for the past 5 years, production, on the basis of the Oct. 1 forecast of the cotton crop, would be 5,858,000 tons compared with 6,325,000 tons in 1951. Normally U.S. production represents from 35 to 45 percent of the world total.

Mexico's cotton production has expanded significantly in recent years with the result that cottonseed output reached a record 655,000 tons in 1951. However, drouth and a 10 percent decrease in cotton acreage reduced this year's cotton crop so that seed production is down an estimated 20 percent—to 528,000 tons.

European production is expected to maintain the 1951 level of 115,000 tons. A decline from 1951 of 90,000 tons of seed is forecast for Asia. Decreases of an estimated 112,000 tons in both India and China reduce their production to 1.62 million and 1.57 million tons, respectively. This loss is partially offset by an over-all increase of some 147,000 tons in Pakistan, Turkey, Iran, and Syria.

Early cotton indications for South America lead to a forecast of around 1.4 million tons of seed, or a decrease of 6 percent from 1951-52.

Cottonseed production in Africa is estimated at 1.75 million tons, representing a 10 percent increase from 1951. The largest single expansion not only in Africa but in the world is expected in Egypt where seed production may be up around 16 percent, bringing the outturn to over 1.0 million tons. A substantial expansion also is foreseen in Anglo-Egyptian Sudan.

Pesticide Regulations to Be Studied at Meeting

Proposed federal legislation to regulate sale and use of pesticides will be given a thorough study at the sixth annual Cotton Insect Control Conference in Memphis, Dec. 10-11. At the meeting, sponsored by the National Cotton Council, speakers will review issues involved in the pesticide section of the Miller Bill, which would: (1) transfer regulation and control of agricultural chemicals from the Department of Agriculture to the Pure Food and Drug Administration; (2) prevent sale of any insecticide until it definitely is proved harmless to human beings.

Public health aspects of pesticides will be reviewed, and a panel discussion will center around possible hazards involved in use of insecticides.

Another conference highlight will be discussion of the rapidly spreading pink bollworm and the threat it poses to the entire Cotton Belt. The present quarantine and control program against the pink bollworm will be considered, along with plans for expanded research to meet the threat.

Other parts of the conference program will deal with benefits to farmers through a unified cotton insect control program; land-grant college and cooperative agricultural programs with private industry; and cotton defoliation as a promising aid in insect control. Also scheduled for review are research highlights in 1952; promising new developments in insecticides; observations and experiences with insecticides, and with spraying and dusting equipment; progress in the use of systemic insecticides; and the insecticide outlook for 1953.

Staley Annual Report Is Given Honor Award

The 1951 annual report of A. E. Staley Manufacturing Co., soybean and corn processor, has been given an award by Financial World Magazine for being outstanding in the milling industry. The award was presented Oct. 28 in New York.

States to Report on 1952 Weed Control Results

Experiences of farmers and scientists in the use of herbicides to control weeds and grass in cotton during 1952 will be reported Dec. 4-5 in Memphis at the second annual conference on herbicidal weed control sponsored by the National Cotton Council. Reports from each state in which herbicides were used will be presented and analyzed, and plans made for 1953.

Planting and seed bed preparation, application techniques with both pre- and post-emergence equipment, calibration of machines, practices that may be used to control weeds late in the season, and data on effectiveness of various weed control materials, all will be included in the talks.

A summary of weed control practices, prepared at the close of the 1952 conference in Memphis last year, will be revised.

The meeting will be a working-discussion type conference with attendance limited to persons actively engaged in weed control research and educational activity.

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MECHANICAL PICKER dumping load of cotton into basket which is being used with trailer carrier unit to haul cotton to gins. This was a feature of the field demonstration at the Shafter Cotton Experiment Station on Oct. 23.

Mechanization Conference Report

Mechanization Outlook

By Wm. J. FISHER

■ Extracts from address delivered at the Sixth Annual Cotton Mechanization Conference, Bakersfield-Shafter-Fresno, Calif., Oct. 22-25, 1952.

I CAN RECALL my early visits to the great cotton growing areas of the Southern states, when the principal farm equipment was a mule, a hoe, a plow stock, and a five-tooth cultivator — of which thousands were made under my own supervision, but which have long since been discontinued because of the trend and necessity for more modern equipment.

I could reminisce at length concerning the various cycles through which the farm machinery industry has passed in our efforts to reduce long hours, and eliminate the back-breaking and laborious tasks which formerly were so common on our American farms. Through these various cycles the introduction of new equipment was indeed a pioneering job. Typical of those early days was the sales resistance against the riding cultivator instead of the old walking cultivator. Farm owners felt the hired men would go to sleep and plow out the plants instead of controlling the weeds.

Even sales resistance to new farm equipment belongs to those bygone days as our American farmers, having seen the value of farm mechanization not only to themselves but to the populace whom they feed, clothe, and house, are eager for improved equipment. It has been my experience that much of our improved equipment is the result of suggestions from the farmers themselves.

During the last 25 years farm mechanization has had a steady—and in recent years, phenomenal—growth. The last of all major crops to feel the impact of mechanization has been cotton. I have had considerable experience in manufacturing and distributing farm and lumbering equipment in our great cotton



Wm. J. FISHER is Vice-President of The Oliver Corporation, Chicago, Ill.

states. And I believe I can safely say that more effort and money have been expended by individuals and companies, through trial and error, on harvesting cotton than any other crop grown on our American farms. But through perseverance, plenty of headaches and plenty of the financial risk so characteristic of our American free enterprise system, the answer to this most difficult problem has been found.

The subject assigned me—"The Cotton Mechanization Outlook"—is a rather comprehensive one. So I believe I shall limit myself to a narrower field. I shall confine my remarks to what I believe to be the more immediate probabilities for the availability and application of machinery to the more efficient planting, cultivating and harvesting of cotton.

Last year my associate, King McCord,

presented to this conference when it met in Chickasha, Okla., a detailed report on the farm machinery outlook for 1952—as governed by the then existing and prospective raw materials situation. Mr. McCord told the conference that many machinery manufacturers had been forced unwillingly into inventory production practices resembling the ancient and unhappy situation of "Robbing Peter to pay Paul." They dug deep below the safe levels of raw materials such as steel, copper, and aluminum on hand. Others, recognizing the real need of cotton growers for such relatively new lines of machinery as pickers, strippers, and so on, reduced scheduled production of other lines in order to meet these needs out of scanty material supplies. I think that historical production figures on pickers and strippers, especially for the year 1951 and as scheduled for 1952, show that the farm equipment industry did a real job of helping the cotton grower fill his needs for mechanical harvesters.

You may be interested to know that 901 cotton pickers were produced in the United States in 1949, and at the end of that year a total of 2,423 were available for use by growers. This represented all pickers built since production was undertaken in 1943. Annual production rose to 1,527 in 1950, more than doubled in 1951 when the four manufacturers in this field built 3,419 machines. Almost 5,000 pickers were scheduled for production in 1952. Total machines in the field at the end of this year, as adjusted for estimated obsolescence and abandonment, should be in the neighborhood of 12,000.

The story on strippers or harvesters of the type used for storm-proof cotton is similar. Production picked up steadily from its beginning in 1944. By the end of 1949, which incidentally was a low production year, about 6,500 such harvesters were in the field. Some 1,482 machines were built in 1950; 5,754 in 1951; and 7,700 were scheduled for production by the various companies in 1952. The total of such production, had it been met, and allowing for an obsolescence factor of 7.6 percent would be about 20,000 units. I call to your attention my use of the word "scheduled." I shall return to it in a moment.

Now, I know that there is broad representation at this meeting from the full length and depth of the Cotton Belt. Men from the Mid-South, and from Alabama, South Carolina, Georgia and other states in the deep South can attest to the economies and increased efficiency of what is, comparatively, just a little mechanization. I know, too, that some of the available figures on mechanization in the old cotton states cannot give us a true picture of the position being attained by the progressive grower there. Enough single men, working with a single mule, can and do account for a lot of cotton in areas where the older methods are traditional.

A look at the Western states, almost newcomers in the game but having single farms with as much as 20,000 acres planted to cotton, reveals more of the possibilities of mechanization. California, Arizona, and New Mexico provide a vigorous young rival for the cotton South, and the degree of mechanization in the states is enlightening. In 1950 Arizona produced 474,000 bales of cotton, of which 43,000 bales or 9 percent were harvested mechanically. The national average that year was 8 percent. In 1951, Arizona produced 803,000 bales,

of which 209,000 or 26 percent were mechanically gathered. The national average was 15 percent.

The California record for the same two years is even more impressive. In 1950, 333,000 bales of cotton out of a total crop of 978,000—the equivalent of 34 percent—were harvested mechanically here. The economic results must have been pleasing to growers, because in 1951 the California crop was almost doubled, and the percentage of their immense crop which was harvested by machinery increased to 53 percent. Incidentally, Texas harvested a 4,000,000-bale crop last year, of which a very fair 19 percent was brought in by machines.

We have specific figures indicating exactly why Western growers have mechanized so heavily in recent years. For instance: The average cost per bale of picking cotton mechanically in California in 1949-50 was \$14.65. Of this, \$7.07 was actual operating cost (labor, gas, oil, etc.) and the remainder was made up of amortization and overhead. This compares with \$34.63 as the average cost for hand picking in the same year. The average difference in grade loss between machine picked cotton and hand picked cotton for the season was \$10.32. It should be kept in mind that machine picking starts at a somewhat later date than hand picking and, of course, toward the end of the season the grades tend to come together with extra late picking showing no difference at all. This should be considered in order to appreciate the grade difference. Actually taking the figures at face value—that is, the \$10.32 grade loss and adding it to the \$14.65 average cost of

mechanical picking—you still find that the total cost for machine-picked cotton was about \$10 under the average seasonal cost for hand picking.

One other thing should be pointed out. The average difference in grade loss between gins varied from \$1.47 to \$28.25, indicating that some of the \$10.32 average is made up of operations from the inefficient gins which were doing a costly job of handling machine picked cotton. If there were many gins sustaining a high grade loss it can easily be seen how the average difference in grade loss might be considerably affected by such gin volume.

In any case, it is apparent that no grower of any size can afford to overlook a potential saving of \$10 per bale, and it is equally apparent that cotton raisers in the West are effecting such savings as rapidly as possible.

I shall return now to my reference to "scheduled production" of mechanical pickers and strippers in 1952. Almost a year ago, on Nov. 7, 1951, the CIO rejected the wage stabilization policy set forth by the United States government. The union demanded, as a matter of its own and presumably higher policy, wage increases greater than permitted by the government's working rules at that time. There followed a continuous succession of disputes and proceedings which culminated in government seizure of the steel industry. You recall Federal Judge David Pine's ruling that President Truman's seizure of the steel industry had been unconstitutional; the subsequent upholding of Judge Pine's ruling by the Supreme Court; and finally the forced return of the steel mills to their private

owners by the government. The steel workers promptly called their big 54-day strike—and 18 million tons of steel were lost to the economy before terms were reached on July 26. Let me repeat the word "lost." Those tons of steel have disappeared forever, and the farm machinery, automobiles, furnaces, buildings and so on which might have been produced from them are also gone for good. The lost steel, incidentally, was six times as much as would have been required by the entire farm equipment industry to meet production goals for 1952 as determined in 1951 by the U.S. Department of Agriculture.

All that I know about some of the other industries is what I read in the newspapers. But I do know that manufacturers of farm equipment are still limping badly from raw material inventory shortages, and we shall probably limp for some time to come.

You know that we have existed for several years now under a system where government said: "All right, you farm equipment manufacturers have a place of this much importance in the national economy, so we are going to allow you to go to the mills or other steel sources and try to get this much steel with which to build your various products." So far, well and good. Compared with other industries and considering the steel requirements of the defense program we have been treated fairly. At times, however, the allotment of steel by the government has been rather far removed from quotas of steel which the several companies in this industry have been able to secure from mills. Many of us have had to piece out our requirements with warehouse material, conversion deals, foreign steel, and other costly arrangements.

This is what I am getting to. Because of production lost by the steel companies in the strike, and in spite of all the production that mills can pile on to meet demand, users of steel for civilian products are going to do without the equivalent of just about three months' steel quotas this year. That's a lot of production material, and I submit that we have an unhappy circumstance when a totally unnecessary strike, thoroughly entangled in politics, can knock out manufacturing schedules of tractors, cotton harvesters, and other products of such proven value to the national economy.

So much for that. We are meeting here, after all, to look ahead rather than backward. Even when we do look back, we see clearly a record of accomplishment all along the way which far outshines the difficulties brought upon us by whatever cause. If we could see widely enough over the 14 major cotton producing states we would count over a million and a quarter tractors doing the heavy labor required of man and mule a few short years ago. The number of such tractors has tripled since 1940. We would see 90 percent of our cotton production coming from 10 fine varieties where 20 years ago, varieties numbering in the hundreds were planted across the Belt with far less certainty of success. We see, beside the tractors, a multitude of useful equipment increasing man's ability to handle large acreages single-handed. Constantly improving multi-row equipment is available. Dusting and spraying are rapidly taking over the job of efficient and economical insect control, and we may note real progress in one of the last big stumbling

(Continued on page 58)



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IRRIGATION PANEL members, left to right: R. V. Thurmond, Kyle Engler, W. P. Law, Jr., M. R. Huberty, Harold C. Schwalen, Charles H. Sorter.

Mechanization Conference Report

First Panel Discussion:

Cotton Irrigation

■ Following are statements by participants in the first of two panel discussions at the Sixth Annual Cotton Mechanization Conference, Bakersfield-Shafter-Fresno, Calif., Oct. 22-25, 1952. Panel leader was M. R. Huberty, Head, Division of Irrigation and Soils, California Agricultural Experiment Station, Los Angeles.

M. R. Huberty

Head, Division of Irrigation and Soils, California Agricultural Experiment Station, Los Angeles.

THE PURPOSE of irrigation is to complement precipitation so that desirable soil moisture conditions can be produced. As irrigation is normally associated with warm dry climates many people are not aware that marked improvement in plant production can be obtained through timely application of water in areas which normally receive high rainfall during the growing season. Droughts during critical periods, even though of short duration, can cause heavy crop losses. Recognition of this fact has resulted in the development of a practice which has come to be known as supplemental irrigation. Two members of our panel, Mr. Bland and Mr. Engler, are very familiar with this type of agriculture.

A successful irrigation project is dependent upon an adequate supply of water of good quality. Adequate development of surface waters generally requires extensive storage and distribution works. On your trip through the San Joaquin Valley you will have an opportunity to view extensive irrigation systems. Surface water supplies are better understood and more fully appreciated than are the ground waters. Ground waters, however, play a very important role in cotton culture in the South and Southwest. As the extent and volume of ground water is not easy to appraise there is danger of developing an area beyond its capacity to meet water demand. When this condition prevails heavy losses ensue.

When irrigation waters are of low quality crops are affected. Some waters, even though they are of low salinity, may be of such composition as to cause poor soil structure. Here in Kern County is a good example of improvement in water quality through the addition of an amendment, gypsum.

Irrigation practice constitutes an important phase of cotton culture. In turn, other farm practices affect irrigation practice. Soil composition with heavy equipment may materially affect irrigation efficiency, as can unwise use of fertilizers.

Cost is always an important consider-

ation in the production of a crop. In desert climates where irrigation labor requirements per unit area are large, it is highly desirable to operate efficiently. One approach to the problem is to develop a good irrigation system. This often requires high capital investment. In areas of supplemental irrigation less attention is given to labor cost per unit time. In any case, it is always well to have the system suited to the conditions.

The cotton plant, with its broad leaves, is very responsive to variations in soil moisture. Extensive irrigation trials testing the response of the cotton plant to different irrigation treatments have been carried out in various parts of the country.

While drainage is not usually a problem in areas where the irrigation water is pumped from the ground water basin, it usually is in regions of surface water supplies. We must always keep in mind that drainage is a very necessary corollary of irrigation if agriculture under irrigation is to be a success.

Kyle Engler

Head, Agricultural Engineering, University of Arkansas, Fayetteville.

IRRIGATION started in Arkansas in 1904, when the first commercial rice crop was produced. Since that time we have had a rather uniform increase in our rice production until at the present time over 500,000 acres of rice is grown annually. The practice of rice irrigation in eastern Arkansas developed water supplies and made farmers familiar with the use of water for irrigation. Consequently, our first irrigation of such crops as corn, cotton, soybeans, and pastures for livestock, was practiced in and adjoining our rice producing areas. Some of the best early work on dry crop

(Continued on page 71)



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KANSAS CITY, MISSOURI

Mechanization Outlook

(Continued from Page 54)

blocks to the complete mechanization of cotton production—weed control. I have been informed that 350,000 acres of cotton were treated with chemicals in 1952 for the control of weeds and grass. The cost of such chemicals in the recommended dosage runs about \$1.25 per acre, with three to five applications required during the season. Even with hand hoeing for the removal of large weeds and some flaming, the total cost did not approach the \$25 to \$50 per acre required where straight hand hoeing was the practice.

Certainly we expect to see a continuation of the relationship between cotton production and mechanization here in California, the most highly mechanized state in the belt. In 1945, California harvested 317,000 acres of cotton; in 1947, the first year of volume mechanical picker production, the harvest was 534,000 acres. Results since that time are cotton history, and I believe that your experts anticipate that 65 to 70 percent of this year's greatest-ever crop will be harvested mechanically. Such a record speaks for itself.

All of these factors point to an ever-increasing acceptance of, and requirement for, mechanized equipment by cotton growers from the Atlantic to the Pacific. Incidentally, we have been talking rather specifically about California

conditions during the last few minutes; however, I wish to call your attention to the fact that the National Cotton Council, the Farm Equipment Institute, and individual manufacturers recognize cotton mechanization as a challenge and a call throughout the width and breadth of the Cotton Belt.

Farmers in Georgia and North Carolina, in Mississippi and Arkansas, are also faced with the problem of mounting costs and the requirements of more economical production if they are to remain competitive and continue to produce cotton. That is why this Mechanization Conference moves from area to area, year by year to bring out the varying mechanization problems in different localities. Next year, I understand, the conference will be held in North Alabama. There, I am told, we will focus our attention on the problems of mechanizing the small farm. Size of farm, volume of production, topography, and credit limitations all enter into the solution of the problem in such areas, yet a solution must be found. The farm equipment industry is not overlooking these areas on their requirements. Thousands of dollars in research are being spent each year to find the answer to the problem of cotton harvesting and other related problems on the small farms of the South and the Southeast.

Speaking as your representative for the industry manufacturing farm equipment, I think I can say—we will continue to strive to meet the challenge of new machines of sizes, patterns and quantities required by progressive growers throughout the Belt, and that the improvements, innovations, and continued changes which are determined desirable and useful to the grower will also be available.

The constant search for improvement, and the cooperation between diverse groups in this search, in all of our methods and machines and even our markets, is one of the most heartening things to me in this whole cotton mechanization outlook. I believe that we all recognize fully the immense contributions which have been made over the years to our mutual prosperity and well-being, not to mention the welfare of the American people as a whole, by the work of the U.S. Department of Agriculture, the Land-Grant Colleges, the laboratories and research people of private industry, and other persons and groups. I do want to mention briefly, and in closing, the jobs that are being done for us by our own trade associations, the National Cotton Council and the Farm Equipment Institute. Concerning the Cotton Council, I can only say that its members are the envy of most other trade association membership groups.

Since the Farm Equipment Institute and its activities may be less well known to you, I want to take this opportunity as its president to offer again to the Cotton Council and its members our full cooperation in all matters where we may have a community of interest. The heart

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and soul of the FEI consists of its standing committees, numbering 20 with a total of 206 members, all of whom are at the same time active in the affairs of their respective companies. At the same time, trade departments, each of which is an association within the larger framework of the Institute are constantly active. Institute representatives also serve on joint committees with other industry groups, such as yours, including the National Joint Committee on Fertilizer Application, the Committee on Pesticides and Application Equipment, and so on. Our own committees include the very important Advisory Engineering Committee, the Committee on Research, the Committee on Soil and Water Conservation, our Research Committee, which is holding a meeting during this conference, and many others. You can see, from the very names of the groups and the activities in which they work, why I recall the mutual interests of our associations to your attention.

Now, I thank you for your attention. I believe that the outlook for cotton mechanization is exactly what we make it, as we get together toward our common advancement and prosperity.

Advance of Mechanization

(Continued from Page 14)

the efficiency of cotton production and reducing its costs.

Better Soil and Water Use

■ 2. We Must Use Our Water and Land More Efficiently. One Conference speaker

called soil depletion "the great hidden cost of production," and others pointed out that farmers everywhere may soon join irrigated producers in thinking of cotton yields per amount of water required, rather than yields per acre of land.

Irrigation practices developed in the Far West and Southwest are spreading throughout the U.S. and to many foreign countries. They promise not only to bring more land into cultivation in drier areas, but also to give greater stability and increased production to cotton areas that have ample annual rainfall, but frequent, costly drouths during the growing season. Supplemental irrigation appears to offer much to many cotton producers throughout the Belt. At the same time, irrigation presents many problems which call for greater study in the future — problems of the influence of irrigation on soil qualities as well as of the steady depletion of water supplies wherever irrigation is long practiced.

Many other trends toward improvement in cotton production — including progress in breeding, disease and insect control, land preparation, staple and grade evaluation, and other fields — accompany the march of mechanization across the Cotton Belt. Too numerous to discuss here, they provide abundant evidence that the American cotton industry is determined to make for cotton lint and seed a lasting, more useful place in the world's economy.

• Uncapped, abandoned irrigation wells are breeding grounds for harmful livestock pests.

Yarn Inventories Reduced In September, TIS Says

Inventories of carded cotton sales yarn of spinners were reduced in September but mills also ate into unfilled order backlogs as sales lagged behind production and shipment rates, the Textile Information Service reports.

At the end of September, spinners still had sufficiently large backlogs of orders to keep them busy for the next 60 days or more but unfilled orders on their books were down nearly five million pounds from the beginning of the month. As of Oct. 4, spinners' backlogs amounted to 9.02 weeks' production and were 9.63 times the stocks on hand. This compared with backlogs on Aug. 30 equal to 10.08 weeks' production and 9.13 times inventories and with unfilled orders on Oct. 6, 1951 amounting to 10.49 weeks' production and 6.28 times stocks on hand.

Total yarn in stock on Oct. 4, including yarn made for future deliveries against unfilled orders, was equal to 93.6 percent of a week's production. On Aug. 30 stocks amounted to 1.10 weeks' output and on Oct. 6 last year they were equivalent to 1.669 weeks' production.

Based on statistics of the Carded Yarn Association covering reports from 1.4 million member spindles, production in the week ended Oct. 4 consisted of 32.8 percent knitting yarn, 49.2 percent weaving yarn and 18.0 percent all others. On Aug. 30, the percentages were 33.7, 49.0, and 17.3 respectively and on October 6, 1951 they were 29.3, 58.6, and 12.1.



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WEED CONTROL PANEL members, left to right: H. P. Smith, Fred A. Kummer, E. Buford Williamson, Panel Leader Roy L. Lovvorn, Frank Fletcher, Paul J. Talley and J. R. Tavernetti.

Mechanization Conference Report

Second Panel Discussion:

Weed Control in Cotton

■ Following are statements by participants in the second of two panel discussions at the Sixth Annual Cotton Mechanization Conference, Bakersfield-Shafter-Fresno, Calif., Oct. 22-25, 1952. Panel leader was Dr. Roy L. Lovvorn, Head Agronomist, Bureau of Plant Industry, Soils and Agricultural Engineering, USDA, Beltsville, Md.

Dr. Roy L. Lovvorn

Head Agronomist, Division of Weed Investigations, Bureau of Plant Industry, Soils and Agricultural Engineering, USDA, Beltsville, Md.

WE ARE TOLD that to grow and pick an acre of cotton requires in the neighborhood of 100 man hours under a so-called non-mechanized system. Complete mechanization could probably reduce this figure to approximately 30 man hours per acre. About two-thirds of the labor under such a figure would go into weed control. Weed control is therefore the last barrier to complete mechanization of the crop.

Great strides have been made in the field of weed control in this country in recent years. Chemicals, in particular, are now extensively used on the cereal crops and to a lesser extent on many others. 2,4-D alone is now used in the neighborhood of 25,000,000 to 30,000,000 pounds annually. Others are gaining rapidly for specialized purposes. There seems to be no end to the possibilities for creating new ones by organic chemists, and we must always look hopefully toward the future.

But what about the present? Great strides have already been made. Last

fall the Cotton Council sponsored the first conference of its kind when cotton weed men met two days in Memphis, Tenn., to pool their information and chart their course for 1952. Results from these discussions emphasized that all phases—chemical, mechanical and flaming—must be utilized and that attention must be given to the control of weeds before the cotton germinates as well as later. Although difficulties were encountered, especially with pre-emergence herbicides in 1952, the future is still bright. We may have to be willing to assume some risk in the use of herbicides with our present "know-how" but I am confident that better methods can and will be developed for the control of weeds in cotton.

Fred A. Kummer

Head, Agricultural Engineering Department, Alabama Polytechnic Institute, Auburn.

LAND PREPARATION plays a big part in weed control in cotton. The method of preparation materially affects the weed population and efficiency of all weed control measures. In tillage studies at the Agricultural Experiment Station of the Alabama Polytechnic Institute, the relation of different seed-bed preparations to weed control was studied. At harvest time there were significant differences in weediness due to treatment. In general, those treatments which most completely inverted the soil surface had the lowest weed count.

Elimination of crop residues and clods plus a uniform preparation are essential for both mechanical and chemical weed control measures. Crop residues clog rotary hoes, sweeps, and chemical

application machinery, causing frequent stops and poor weed control. Uneven seedbeds prevent efficient use of both pre-emergence and post-emergence equipment. The land leveler or smoother could be used to great advantage in preparing a seedbed for efficient weed control. The construction of broad type terraces to accommodate weed control equipment is important in the Southeast.

Getting a good stand plays an important role in weed control. One of the biggest problems of machine harvesting is the control of grass and weeds after "lay-by" time. A good stand minimizes this problem by shading out the grass and weeds, while a skippy stand promotes their growth. Since the rotary hoe destroys a few cotton plants, a good stand is necessary for proper use of this implement. The use of the rotary hoe is often limited due to poor stands.

Weed control practices in Alabama are mostly by mechanical means. For mechanized farms, the rotary hoe is the best implement from all standpoints for early control. This implement is relatively cheap, easy to operate, fast, and readily adaptable to most farming practices. Timely and frequent use of the rotary hoe will eliminate most hand hoeing. Either the towed or cultivator attachment type may be used with equal effectiveness. In addition to the early control of grass and weeds, the use of the rotary hoes aids greatly in getting a stand, especially after a crust formation.

All farmers still use sweep cultivation to control the weeds in the middles and to kill small weeds in the drill by covering them with soil. As in the case of rotary hoe cultivation, sweep cultivation must be timely and frequent, depending on the weather conditions. Late sweep cultivation will reduce weeds at harvest time.

Chemical weed control has not been practiced in Alabama. Many farmers realize the importance of chemical weed control, especially during adverse weather conditions when mechanical means cannot be used. However, they are waiting until the practice is further developed to make it more reliable for general use. Machines for application have been a drawback. The requirements of

(Continued on page 73)



PART OF CROWD and a line of equipment used in the field demonstration at the Shafter Cotton Experiment Station on Oct. 23.

Mechanization Conference Report

Field Demonstration of Cotton Production Machinery and Methods

By J. P. FAIRBANK

■ Remarks made at the field demonstration held at the U.S. Cotton Field Station, Shafter, Calif., in connection with the Sixth Annual Cotton Mechanization Conference, Bakersfield-Shafter-Fresno, Calif., Oct. 22-25, 1952.

THE STAFF welcomes you to the U.S. Cotton Field Station, commonly known as the Shafter Station.

This experiment station is a truly co-operative one—operated in cooperation with Kern County; the United States Department of Agriculture; the University of California; the California Planting Cottonseed Distributors; and the California Potato Growers' Association. The financing is unique, in that all of the operating money does not come from county, state and federal funds—very important financial assistance comes directly from the cotton industry itself.

This station is known primarily for the work on plant breeding—specifically for the development of improved strains of the Acala variety of cotton—the current one being Acala 4-42. Along with genetics and plant breeding, there are studies on fertilization, pest control, defoliation, and irrigation.

The program has been expanded to



J. P. FAIRBANK is Regional Director of the California Agricultural Extension Service, Berkeley.

include cotton mechanization—the reason you are here.

A principal objective of our Cotton Mechanization Project has been to learn how to grow our irrigated cotton to fit

mechanization—how our farmers can make the best use of mechanization. This requires teamwork of the plant scientists and biologists with the engineers.

Experimental work involving mechanization includes: plant breeding (for high quality of lint, high yield, suited to mechanical harvesting and easily cleaned), planting to stand; spacing (plant population); mechanical thinning; weed control—by tillage, flame, and chemicals; insect control; irrigation; defoliation; mechanical topping; mechanical harvesting.

We shall demonstrate here in front of you a number of the farm implements of the type used here on the Station in connection with the cotton mechanization project. Many of these machines are identical to those in general use over the Cotton Belt; some are peculiar to the West, but all have a place in our irrigated agriculture.

1. Subsoiler

A machine which originated here in the West for the purpose of breaking impervious subsoil to increase the penetration of water. You might say that the subsoilers are intended to help correct the mistakes of Mother Nature and of man. They have from one to three standards; are usually operated from 18 inches to 3 feet in depth. Subsoilers or rippers are used also in landleveling operations to loosen hard soil for the scrapers or carryalls.

2. Two-way plow

A plow which is commonly used to keep land level, leaving no dead furrow to interfere with irrigation. There are several variations of this type plow such as the "tumble-bug" and the newer hydraulic controlled, integrally mounted. In large fields, plows with as many as four or more bottoms are used. Plowing depths of 10 to 12 inches are not uncommon.

Disc plows are also common implements used in land preparation by the large operators. Following crops where there is little or no crop residue the land is only disced, harrowed and floated for seed bed preparation. It can then be planted flat or listed for ridge planting.

3. Tool-bar-lister

This is used for throwing up ridges prior to pre-irrigation. The ridges may be prepared with the intention of planting on them or on land where water penetration may be slow or difficult; the land may be listed for pre-irrigation purposes only. In that case, the ridges later are worked down flat by discing and harrowing.

4. Till-N-Pack—Culti-packer

A type of culti-packer which has knob extensions on the rollers. Rollers are flexible so that they conform closely to ground profile. It is used for firming seed beds, as a crust breaker prior to emergence and often as a pre-cultivation tool after emergence. It is not used when the cotton is in the "crook" at emergence; may be used prior to or after emergence to good advantage.

5. Old Two-row pull-type planter

This is the Station's "precision" planter. Where small quantities of seed are to be planted in the breeding work and 100 percent emergence is hoped for this is the planter they use. Attention is called to this old type planter which is equipped with a steel press wheel for firming the seed in the soil prior to

(Continued on page 70)

Value of Farm Products Exports Decreases

The value of U.S. exports of agricultural products in August was 33 percent less than in August 1951, says USDA. Agricultural products accounted for 18 percent of the value of all U.S. exports during the month, compared with 22 percent in August a year ago. Farm products exports were valued at \$186,000,000 in August 1952 against \$277,000,000 a year ago.

Wheat was the leading agricultural export on a value basis, with shipments in August valued at \$51 million compared to \$84 million a year ago, or a decrease of 39 percent. Notwithstanding the considerable decrease, wheat exports were still valued at more than double the value of exports of either cotton or flue-cured tobacco which were second and third in value, respectively. Cotton exports were valued at \$21 million compared with \$32 million a year ago, a decrease of 35 percent and flue-cured tobacco was \$18 million compared with \$27 million a year ago, a decrease of 35 percent.

Some of the sharper decreases percentage-wise occurred in the quantities of dairy and poultry products exported. During August 1952 there was 98 percent less cheese exported than in August a year ago, 90 percent less dried eggs, 73 percent less butter, 67 percent less evaporated milk, 48 percent less condensed milk and one-third less dried whole milk. Other sharp changes included 74 percent less grain sorghums, 70 percent less shelled peanuts and 53 percent less rice. On the other hand increases of exports occurred in several of the processed fruits and vegetables and some of the meats, flour and soybeans. There was almost a 6-fold increase in the exports of dried prunes, almost 5-fold increase in soybeans, and more than double the exports of raisins and currants.

Exports of canned fruits were up 63 percent, fruit juices 43 percent, canned vegetables 61 percent and soybean flour almost doubled.

Agricultural imports during August were valued at \$337 million, a decrease of 18 percent below the \$413 million worth imported in August a year ago. Imports of nonagricultural commodities decreased only slightly from \$480 million in August 1951 to \$478 million in August 1952. Agricultural products represented 41 percent of all commodities imported in the month under review compared with 46 percent a year ago.

Supply of Peanuts Drops, Millings at Low Level

The supply of peanuts held in commercial positions declined in September, as the first month of the 1952-53 milling season ended, according to USDA. Holdings of peanuts in off-farm positions on Sept. 30, expressed in farmers' stock equivalent, totaled 261 million pounds, excluding shelled oil stock. This compares with 339 million pounds on hand a month earlier and 228 million pounds a year ago.

Farmers' stock peanuts of the 1952-53 season milled during September totaled 62 million pounds. This is about 11 million pounds more than the 51 million pounds milled during September 1951, but otherwise it is the smallest quantity milled during September for any year since 1947.

Britain to Permit Imports Of Linseed Oil in 1953

The British Board of Trade has announced that imports of linseed oil and flaxseed from any source will be permitted under license during the period from Jan. 1 to June 30, 1953. USDA reports that the ratio of permitted imports to purchases of flaxseed or linseed oil from the Ministry will be reviewed from time to time in the light of disposal of the latter's stocks. After Jan. 1, importers will be asked to submit periodical returns showing the quantities of flaxseed and linseed oil imported against the licenses issued them.

Presenting

Edward L. Nash

Waxahachie, Texas



EDWARD L. NASH, Waxahachie, Texas, was born Jan. 17, 1915 in Paris, Texas. After graduating from high school, he began work for Southland Cotton Oil Co. in Paris in 1932, remaining with the firm until 1939. After three years with the Paris Fire Department, he rejoined the Southland organization as assistant superintendent at Shreveport, La. In 1943 he was transferred to Waxahachie as night superintendent and in 1950 was promoted to his present position of superintendent there.

After serving as vice-president of the National Oil Mill Superintendents Association in 1951, he was elected president in May, 1952. He is a member of the Lions Club, Masonic Lodge, Country Club, First Monday Catfish Club and First Baptist Church.

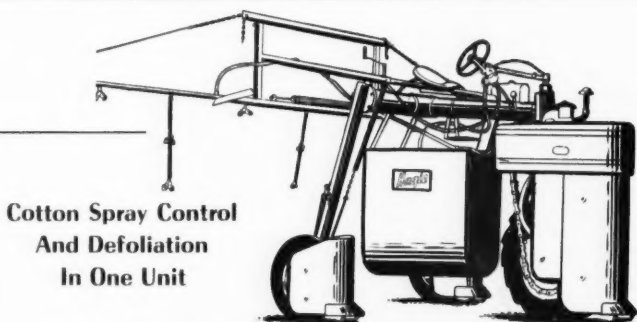
R. B. Strickland Recovers From Surgery in Waco

R. B. Strickland, well-known Waco, Texas dealer in cotton gin and industrial machinery, has recently been confined to Hillcrest Hospital in Waco. Strickland went to the hospital for surgery and his friends throughout the industry will be glad to learn that he is now considered fully recovered.

September Copra Exports By Indonesia Decline

September copra exports from Indonesia set a new low for 1952 and were substantially below the previous month, says USDA. Copra shipments of 11,302 long tons for September compared with 17,042 in August and 37,672 in September, 1951. Total copra production in September was 33,660 tons and deliveries to oil mills were 9,984 tons.

• Nearly 333,000 4-H Club members enrolled in gardening projects last year—an increase of 17 percent over the year preceding. All 48 states carried this project as part of their 4-H work.



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Dallas Gin Machinery Plants Included in Engineering Students' Tour

SIXTY-SEVEN Texas University mechanical engineering students and two faculty members visited more than a dozen Texas manufacturing plants last week, including Continental Gin Company and the John E. Mitchell Company in Dallas, both of which are manufacturers of cotton ginning machinery. Top picture shows the entire group in the demonstration gin

plant of Continental Gin Company. Bottom picture shows a group of the students observing a manufacturing process in the Mitchell plant. Texas University faculty members accompanying the students were Dr. B. E. Short, chairman of the Department of Mechanical Engineering, and H. E. Staph, assistant professor of mechanical engineering.



CG&OMPress Photo.

THIS SHOWS some of the equipment used in a land-leveling demonstration, near Wasco, during the San Joaquin Valley field trip on Oct. 24.

Mechanization Conference Report

Cost of Mechanized Cotton Production in Arizona

By R. KEITH WALDEN

■ Extracts from address delivered at the Sixth Annual Cotton Mechanization Conference, Bakersfield-Shafter-Fresno, Calif., Oct. 22-25, 1952.

THE PROGRAM COMMITTEE asked me to prepare a talk on "Operational Costs of Mechanized Cotton Production in Arizona."

In what way does the subject interest you people who attend the Beltwide Cotton Mechanization Conference? Perhaps it is because Arizona has for the past two years exceeded all other states in its cotton yield per acre. Because our yield is high, I am afraid that many of you who came from the Cotton Belt east of the Pecos River are inclined to underestimate the cost of growing cotton in Arizona. As a matter of fact, I find that many growers in Arizona and California fail to account for much of their own costs when I ask them what their cost per pound is to grow, pick and deliver their cotton to a gin.

It reminds me of a story told to me by a USDA research soil chemist about another soil chemist who was running some experiments regarding plant response to varying soil types. In one pot, he had a plant growing in a very fertile soil. Needless to say, the plant grew strong and vigorously. In another pot, he had a lean, thin soil that in character was neither a storehouse of plant food or moisture. However, he was telling his friends that the lighter type soil produced just as good a plant as did the heavier type fertile soil. My friend, also a soil chemist, said that just could not be, and asked the other scientist what type of elements he added to the poor soil to give the plant the food it needed. The researching scientist said he would



R. KEITH WALDEN is President of Farmers Investment Company, Tucson, Ariz.

swear on a Bible that he never added a thing other than pure water—then hesitated a moment, scratched his head, and said to his friend: "Say, we have a cat at the laboratory who took pains to cover up his daily dropping in the soil of that potted plant. I wonder if that could have had some fertilizer value." In Arizona, we are heavy users of fertilizer, but if we just had enough cats, it would save us \$20 to \$30 per acre.

Stop Mining the Land

I think that many of us in the cotton business, and also in American agriculture as a whole, do immeasurable harm to agriculture in overemphasizing

our efficiency through failure to account for the full measure of our costs. The public relations job in agriculture has been poorly handled, and, as individual farmers, some of us have not helped by stating rather freely, even approaching boastfulness, that we are delivering cotton to the gin for 15 cents to 20 cents per pound. I am inclined to believe that many of the low cost figures are not correct. These incorrect low costs are derived in no small measure from that great hidden cost, soil depletion. While I do not say this critically of our friends in the South, part of the low yield from Southern plantations today is the direct result of a century of mining operation—mining the land, as carried on by the predecessors of many of you people here today. In the last decade, this trend has started to reverse itself. You people in the South are finding that you are not now tied to a one-crop economy. You are planting grass and entering the livestock business at an unprecedented rate. For the first time in a century, you now have a competitive use for the land, which not only makes your economy more stable, but will in time increase the productivity of your land.

Maintain the Production Plant

We in the West, and particularly in Arizona, are relatively new in the cotton business. Our success has been phenomenal and our costs are low. With the exception of water insecurity in some areas, we are basically sound in the cotton business. It has now been proved that irrigated cotton has acceptable qualities for mill use. Our frost-free season is long enough to permit continued growth and development of bolls late in the season. Our picking season in Arizona is relatively free from grade-reducing fog and rain. Insects are not beyond the point of feasible control. All of these favorable points I mention; but in spite of all these, our success shows signs of poor understanding of that good sound business principle called maintaining the production plant. Our farms here in the West are literally factories in the field. We should consider them as factories, and properly maintain them just as the manufacturer of an industrial commodity maintains his production plant. Too many farmers—though perhaps unknowingly—are operating their farms as the great mining companies of Arizona operate their claims. With the extraction of the finished product, each year the claim is worth less. Failing to maintain soil productivity on a farm is somewhat comparable to a mine claim being exploited of its ore—it is basically worth less and less each year. The land becomes less productive; weeds first appear around the borders, gradually encroach into the fields. Irrigation water, unless properly used, often causes erosion at the ends of the fields, to say nothing of the loss of an expensive production item.

Fortunately, in contrast to the body of ore being exploited, the farm operation can be carried on in such a way as to make the farm as good, if not even better, productive unit as years go by. This means establishing a long range policy of soil building. It means, perhaps, higher unit cost currently, but it does spell out permanency of investment. Unit costs will lower in the long run.

It is largely a question of policy executed by good management to maintain a good farm or restore a run-down farm

(Continued on page 67)



Cal Williams Photo.

GIN YARD at Calolina Farms, Bakersfield, owned by W. B. Camp and Sons and Frank Jeppi. Conference delegates inspected the gin and other facilities on the Calolina Farms on Oct. 23.

Mechanization Conference Report

Cost of Mechanized Cotton Production in California

By Dr. JOHN P. BENSON

■ Extracts from address delivered at the Sixth Annual Cotton Mechanization Conference, Bakersfield-Shafter-Fresno, Calif., Oct. 22-25, 1952.

IN MECHANIZATION we seek the ultimate in elimination of man labor from the production process.

On our cotton farm we have had experience with mechanization over a short and somewhat stormy period of years. We have learned from the experience of other growers, and from basic data developed by the Agricultural Extension Service of the University of California and other public agencies.

The change from hand to machine production has been going on for a long time. Cotton first was produced by means of mule-horse power, coupled with a certain rather large amount of brawn. The change, then, is from mule-horse power and brawn to the machine and brains.

Of course, we'll have to admit that it required a certain amount of brain power to get along with a horse or mule. But to get along with a modern diesel tractor and all the multiplicity of devices to be attached to the tractor, and to get along with the mechanical picker, requires a much larger portion of brains capable of the clearest kind of thinking.

As growers we are approaching a solution to many of the problems involved in mechanization. We are approaching



Dr. JOHN P. BENSON is a cotton farmer, at Five Points, Calif.

the ultimate goal of maximum efficiency. Although we may never attain maximum efficiency, we must ever hold to the goal of maximum production per acre of the highest quality product at the lowest possible cost per unit.

Cotton mechanization involves much more than the changes referred to a moment ago. It involves an understanding of the many factors which affect produc-

tion, their interrelationships and interdependencies.

Here in California we have come close to eliminating hand labor in production. The problem of weed control, which has already been ably covered, during this conference, is one field in which hand labor is largely used. Another is the actual distribution of irrigation water. Both of these hand operations are being studied in the hope they can be eliminated.

We must remember that to operate complicated machinery requires a much higher type of intelligence than to hoe weeds or to use a shovel in the distribution of water. A highly mechanized farm must, of necessity, employ men of the best intelligence. They must be careful, resourceful, and have imagination and judgment not found in the average worker who comes to us an irrigator or cotton picker. You just don't turn over a \$5,000-to-\$15,000 machine to the care of anyone who happens along. To get the kind of man you need for mechanization, you must provide him a better type of housing and a year-round job. He must get a higher wage. His children must have the best of schools.

Many of us are trying to find this higher type of labor. We are striving to arrange our production programs so that we can provide year around work.

Now, as to actual costs of mechanized cotton production in California, I naturally call upon personal experience. On our farm, we can summarize costs (not including rent) about as follows:

Item	Cost Per Acre
Labor and field power	\$116.00 to \$121.00
Material	36.00
Overhead (partnership management, field foreman, county taxes, miscellaneous repairs, insurance)	15.00
Depreciation	13.00
Interest on investment at 5%	17.50
Total all costs	\$197.50 to \$202.50
Less seed credit (figured on average 2-bale yield)	56.00

Net cost of lint production \$141.50 to \$146.50

As I previously stated, reduction in costs must come not only from the elimination of as much hand labor as is humanly possible, but also from improvements in all of the operations necessary in cotton production.

We must discover, with the help of our Experiment Station and other research staffs, better and more efficient methods of seedbed preparation, better and more efficient methods of applying irrigation water.

We need improved seed treatments, along with the cooperation of farm implement manufacturers in the production of more efficient and effective planters (our present planters are little different from those of 50 years ago). We need more practical spraying devices.

If we are to produce a high quality product picked with a machine, we must have a defoliant that will remove the leaves with or without the presence of moisture on the plant.

These are to me some of the more important things we must be looking toward if we expect significant cost reductions and greater efficiency in the years ahead.

• Agricultural income in Kern County, Calif., last year was \$245,000,000 for the 2,599 farms in the county. Average cotton yield was 750 pounds per acre on 325,000 acres. The county has 52 gins.

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- 6—200 hp. 3/60/440/900 rpm, slip ring
- 4—150 hp. 3/60/2300/900 rpm, slip ring
- 2—150 hp. 3/60/440/900 rpm, slip ring
- 3—125 hp. 3/60/440/900 rpm, slip ring
- 2—125 hp. 3/60/2200/900 rpm, squirrel cage
- 2—125 hp. 3/60/440/900 rpm, slip ring
- 1—100 hp. 3/60/2200/900 rpm, squirrel cage
- 1—100 hp. 3/60/220/900 rpm, squirrel cage
- 4—100 hp. 3/60/2200/900 rpm, slip ring
- 2—75 hp. 3/60/440/900 rpm, slip ring
- 2—75 hp. 3/60/220/1200 rpm, squirrel cage

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Oil Mill Equipment for Sale

OIL MILL EQUIPMENT FOR SALE—Anderson Expellers, French screw presses, cookers, dryers, rolls—Pittcock and Associates, Glen Riddle, Pa.

FOR SALE—72-85" cookers, rolls, formers, cake presses and parts, accumulators-pumps, hull-packers, Bauer No. 153 separating units, bar and diac hullers, beaters-shakers, Carver linters, single box haling presses, filter presses, expellers, attrition mills, pellet machines, pneumatic seed unloader. If it's used in oil mill, we have it.—V. A. Lessor and Co., P. O. Box No. 108, Fort Worth, Texas.

FOR SALE—Complete hydraulic oil mill less buildings. Mill equipped with power, three presses, cookers, formers, cake stripper, cutter and rolls. Cake mill, separating unit, beaters, protein machine, 10 linters, Martin lint handling equipment. Helm saw filer, press box, seed house equipment and oil tanks. Also two cotton gins with or without buildings.—Union Cotton Oil Co., Prague, Okla.

OIL MILL SUPERINTENDENTS—May we furnish you, without obligation, literature on recommended vacuum equipment to do a better house-keeping job in your mill.—The Gilliam Co., P. O. Box 19115, Houston 23, Texas.

OIL MILL MACHINERY FOR SALE—Everything for hydraulic press rooms—141-saw linters—No. 199 seed cleaner—42" Chandler huller—filter presses—Carver meals purifier—electric motor—screw conveyor and rollers.—Sproles and Cook Machinery Co., Inc., 151 Howell St., Dallas, Texas. Telephone PROspect 5958.

FOR SALE—Three French 3-section mechanical screw presses.—Swift & Co. Soybean Mill, P. O. Box 68, Champaign, Ill.

Gin Equipment for Sale

OUR REBUILT MACHINERY operates like new. Our customers know this. Here are some of many good items ready for shipment. 5-80 saw Murray "glass front" gins. Four 70-saw Mitchell "standard units" (suitable for Lummus or other close-coupled gins.) Several 35", 40" and 45" fans. Also cast iron dirt fans. Murray, Continental, Union and Lummus triplex hydraulic pumps, 10, 50 and 60 h.p. electric motors. Hundreds of other items. For quick service, call us for new Phelps fans, belting and pulleys.—R. B. Strickland & Co., 13-A Hackberry St., Tel. 2-8141, Waco, Texas.

FOR SALE—1 Murray horizontal pump, 1 10 h.p. 3 phase 60 cycle 220 volt 900 r.p.m. electric motor with flat belt drive for above pump, 1 52 3/4 6 cylinder master 6 Murray cleaner, 1 72" 29-M up-draft Murray separator, all steel.—W. S. Moore & Son, Navasota, Texas.

FOR SALE—At a bargain—to be moved less building, 4-80 complete Murray outfit, double extraction, with roll dumps and glass fronts.—Bill Smith, Box 694, Phones 4-7847 and 4-9626, Abilene, Texas.

GIN FOR SALE—To be moved, Hardwicke-Etter 5-90 air blast, complete all-steel with all-steel building, \$15,000.00 without power, \$22,000.00 with power. New General Motor, Series 110.—Wood-High Cooperative Gin, Route 1, Inez, Texas. Phone Victoria, Texas 3516W3 or 3514W3.

FOR SALE—Reconditioned and ready to go. Two Murray gins with 6" mote conveyors and new glass fronts. 1 12" Murray steel center feed bar machine. 1 60" V-belt super Mitchell. 1 60" V-belt standard Mitchell equipped for drying. 1 66" flat belt standard Mitchell. 4 60" flat belt Mitchells equipped for drying. 3 4-cylinder steel inclined Continental cleaners. 1 52" 8-cylinder Stacy steel horizontal cleaner. 2 43" 8-cylinder steel Stacy cleaners. 2 50" 5-cylinder inclined Hardwicke-Etter wood cleaners. 1 12-section Lummus thermo cleaner. 1 16-section Lummus thermo cleaner. 1 13-section Murray tower drier with 1 1/2 million B.T.U. burner. 1 Lummus B. B. steel tramper. 4 66" model D Continental double X huller cleaner feeders with 4-cylinder after cleaners. 1 52" Continental separator. 1 42" Stacy separator. 2 60" steel Continental side discharge condensers. 1 72" Murray steel 1949 model down discharge condenser. 1 4-80 Murray submerged lint flue. 1 5-80 Con-Tennial conveyor distributor. All the above machinery in my warehouse at Abilene.—Bill Smith, Box 694, Phones 4-7847 and 4-9626, Abilene, Texas.

FOR SALE—One large Continental burr machine with automatic feed control and overflow. Was installed new in 1949 and has processed approximately 1,000 bales of snapped cotton.—O. S. Garrison, Homer, Ga.

FOR SALE—1 10 ft. Murray all-steel burr machine. 2-10 ft. Hardwicke-Etter left and right. 1-14 ft. Hardwicke-Etter wood frame. Buying late model, good, used gin machinery. Advise with make and price.—Spencer's Cotton Gin Sales and Service, 5 miles north of Georgetown, Texas, P. O. Box 204.

FOR IMMEDIATE SALE—Some of the best gin buys ever offered in South Texas and the Rio Grande Valley. Gins that will net their cost in less than two years operations. Also several West Texas gins in all irrigated areas where big runs assured. Many of these can be bought far below their cost and potential value. If interested call, write or wire Industrial Sales Company of Texas. M. M. Phillips, mgr., P. O. Box 1288, Phone 5-5555, Corpus Christi, Texas.

Equipment Wanted

WANTED—Single box hydraulic linter haling press. Address Box "J.V." c/o The Cotton Gin and Oil Mill Press, P. O. Box 444, Dallas 1, Texas.

WANTED—To buy a good used gin complete. Please state make, description and location. Write Box "U.D." c/o The Cotton Gin and Oil Mill Press, P. O. Box 444, Dallas, Texas.

WANTED—Four 60" Mitchell FEC for 70-saw stands. 1937 or later model.—Wied Gin, Shiner, Texas.

WANTED—4 or 5 Murray gins and Mitchell feeders. Or would buy complete gin to be moved. Write Box "J.L." c/o The Cotton Gin and Oil Mill Press, P. O. Box 444, Dallas, Texas.

Personnel Ads

NOW AVAILABLE—Experienced oil mill superintendent. Would be interested in position as superintendent or assistant superintendent. References gladly furnished. Write Box "CE" c/o The Cotton Gin and Oil Mill Press, P. O. Box 444, Dallas, Texas.

WANTED—Oil mill superintendent. Small mill year round employment. Must have ability and character. Fremont Oil Mill Company, Fremont, N. C.

Power Units and Miscellaneous

FOR SALE—New and rebuilt Minneapolis-Moline engines, from 35 h.p. to 220 h.p., call us day or night for parts and service.—Fort Worth Machinery Co., 913 E. Berry St., Fort Worth, Texas.

FOR SALE—One 220 h.p. model NE, 8 x 9 M & M (Twin City) gin engine in good condition.—Anton Producers Co-op Gins, Anton, Texas.

FOR THE LARGEST STOCK of good, clean used gas or diesel engines in Texas, always see Stewart & Stevenson Services first. Contact your nearest branch.

FOR SALE—International Harvester UD-24 diesel, 180 h.p., with clutch, outboard bearing and base, heat exchanger cooled, perfect condition. Two years old. Can be seen in operation in Little Rock area. Priced for quick sale at \$2,950.00. Contact: Cummins Illinois Engine Sales, 1700 Indiana Avenue, Chicago 16, Ill., Phone Wabash 2-5236.

COTTON PLANTING SEED—We don't sell cheap bargain-price seeds. Only the very best, high quality, treated, tested and tagged—including Arkansas Certified, Dorth No. 1, Deltapine 15, Empire, also Chemical Delinted in most varieties.—Greenville Seed House, Inc., Greenville, Texas. Write us for all kinds of field, pasture, garden and flower seeds, pecans, choice paper-shells.

Seed, Fertilizer Dealers Meet in Tennessee

Tennessee seed and fertilizer dealers will attend three meetings, Nov. 12-14, to discuss latest information on crop varieties, fertilizer practices and other problems. The meetings are sponsored by Tennessee Extension Service and State Department of Agriculture.

Arizona Mechanization Costs

(Continued from Page 64)

to a state of high productivity and a fundamentally sound operation. If you will pardon a reference to one of our own operations, I will refer briefly to our Continental farm in Arizona.

My company, Farmers Investment Co., acquired the Continental farm near Tucson nearly four years ago. At the time we acquired the property, it contained approximately 1,900 irrigated acres on which cotton had been grown continuously for 25 years. Early production was low, but even during the last 10 years, when supposedly modern methods were applicable, production averaged only 1 1/4 bales per acre. Records indicate that weed hoeing costs had run as high as \$60 per acre per year. Buildings had been badly neglected and farming tools and equipment were in an unfortunate state of repair. Other than pumps and wells, on which much repair and maintenance work had recently been done, irrigation facilities, such as ditches, diversion boxes, underground concrete pipelines, and gates were in bad shape. There was no program of crop rotation in effect, though a feeble unsuccessful effort to grow peanuts instead of cotton had been made in 1948.

Since February, 1949, we have developed on the Continental farm an additional 1,700 acres for irrigation, making a total of 3,600 irrigated acres. During the last two years, we have planted cotton on 2,500 acres and have established a crop rotation program on the balance which will build back soil productivity. In spite of a 40 percent increase in the hourly rate of pay to common labor, our chopping and weeding costs are now under \$20 per acre. Our buildings for employee housing, equipment shed, and repair shop, are now all in first class condition. Irrigation facilities have been repaired and replaced as necessary; equipment is currently repaired and not allowed to run down, and maximum insurance is carried on everything. Our costs per acre, during this period of rejuvenation, have naturally been high, but our yields, which have averaged in excess of two bales per acre, have justified the expense and effort. On this farm, we have developed some fairly steep, sloping land which is somewhat questionable as to basic fertility. People have asked me how we could justify the development of this land just for the usual short life of a cotton boom. I might say that we developed this land with our eyes open, and we have a long range program for it.

Planning the Use of Water in Arizona Cotton Production

No cotton can be grown in Arizona without substantial and continuous irrigation before and during the growing season. The investment in wells, pumps, and motors, and the cost of operating this equipment, is large. It is a mechanical operation, involving on many farms electrical power, but on others reciprocating engines fueled by either natural gas or diesel. It is an expensive part of mechanized cotton production in the West. Labor to spread the water is another significant item in the cotton grower's budget. Furthermore, land suitable

for cotton production in Arizona is much more plentiful than water supply. For these reasons, Arizona cotton growers are constantly studying, experimenting, and trying to devise ways and means of obtaining greater production from a given volume of water. Some of us have started thinking in terms of bales produced per gallon per minute of water flow, or bales per acre foot of water produced instead of bales per acre.

Cotton varieties appear to play a significant part in water relationships and one of our better varieties from a quality point of view seems to fall down on a restricted irrigation schedule compared to some of the others.

Storing the maximum amount of water in the ground prior to planting is most essential, and the fact that cotton is a deep-rooted plant argues well for a deep pre-planting irrigation. Tests have been run on various spacings of plants, both in the row and the width of the rows themselves.

I think all irrigated cotton farmers have observed for a long time that the outside row along the edge of a field is oftentimes the most heavily loaded, and it would, therefore, be only logical to assume it produced more cotton per row, or per acre or any way you want to calculate the yield.

In 1951, a very limited cotton acreage in Arizona was planted as follows: with a small amount of water, 850 gallons per minute, a 160-acre block was pre-irrigated solid. Cotton was then planted in 38-inch rows, but every third row was left vacant, which, in effect, meant that only two-thirds of the land was planted, or 100 acres. Furthermore, every row was the equivalent of an outside row, with all the benefits of sunlight, air, and additional soil mass from which the roots could draw moisture. When summer irrigation started, only the furrow between the two rows of cotton was irrigated, which, in effect, meant that only one-third of the land was being irrigated. Yield of cotton amounted to 332 bales, or slightly in excess of two bales per acre on all the land, but three bales per acre based on the fact that only two-thirds of the land had cotton planted in standard-width rows. Water supply was, as mentioned, 850 gallons per minute, a volume considered adequate for not more than 100 acres.

Largely as a result of the experiment referred to, this method of planting and irrigation was put into effect this year on 3,300 acres of our own property located in southeast Pinal county of Arizona, and operated for us by Finley Brothers, two of Arizona's outstanding cotton farmers. On this property we have an acreage considerably in excess of our irrigation ability, and Arizona laws prohibit further drilling of wells in this area. For this reason, the plan suited our operation admirably. At the present time, picking has not progressed far enough to be certain of the outcome, but indications are that we will probably increase our production 20 percent, using the same or slightly smaller water supply than in 1951.

(Continued on page 82)

Tender 644 Cars of Oil To Dallas PMA Office

Dallas commodity office, Production and Marketing Administration, announced Nov. 5 that it has received so far this season tenders of 644 tank cars of crude cottonseed oil, 57,005 tons of meal and cake and about 37,374 bales of lint under the 1952 cottonseed price support program.

About 44,735 tons of the meal and cake have already been repurchased by the mills. The remaining 12,270 tons were sold to CCC for delivery in May, June and July, 1953.

To date, 505 tank cars of crude oil have been sold to refiners for refining. Resultant refined oil will be repurchased by CCC. The Dallas office announced that Harvest Queen Mill and Elevator Co., Mexia, Texas, has signed a contract with CCC to store refined cottonseed oil, with the first shipments unloaded there Nov. 1.

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Summary of Conference

By **CLAUDE L. WELCH**

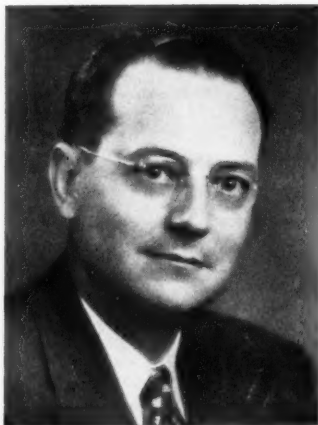
DIRECTOR COKE closed his address of welcome expressing the hope that this conference would accomplish at least two things: first, that it would enable those of us who are interested in cotton mechanization from all across the Belt to become better acquainted with each other; and second, that in becoming better acquainted we would all be able to learn more about cotton mechanization than we would were we each to pursue our different interests independently. Those objectives come close to stating the aims most of us had in mind in initiating this series of annual Belt-wide conferences. I feel sure it would be your consensus that those aims have been well served by this, the Sixth Annual Belt-wide Cotton Mechanization Conference.

In attempting to summarize these proceedings I would be presumptuous were I to attempt an interpretation of each of the excellent technical discussions and field demonstrations for you. Anyway, it is our fervent hope that in making your own interpretation of what you have heard and seen during these proceedings there will be generated newer and better ideas for the ultimate benefit of the cotton industry. I would like, however, to have a brief try at bringing these proceedings into a perspective which relates to cotton mechanization progress all across the Belt.

I invite your attention to the setting in which this conference has been staged. We have heard this western agriculture referred to as a "man-made agriculture"—and that is surely an apt description because, clearly it required an unusually large amount of human ingenuity, courage, and foresight to bring this agriculture into existence. In fact, I think it would not be stretching matters too far to suggest that here we have an agriculture which has grown out of, and the success of which largely depends upon, highly developed managerial ability, technical competence, and the generous but intelligent use of capital. But given this agriculture which is so largely man-made, the highly developed stage of farm technology is actually no more astonishing than the existence of the agriculture itself.

But, I wonder if we can't draw a useful contrast between this region and the many sections of the Belt where mechanization progress has lagged. Many of them are sections where we have been inclined to take for granted that the natural environment is superior for cotton production—and I wonder if our ideas about opportunities for improving farm practice haven't been unduly limited by this notion.

Out here we find the whole of agriculture geared to irrigation. Keith Walden is even suggesting, and properly so, that western cotton yields might best be expressed as pounds of lint per acre foot of water. And, we have heard that the purpose of irrigation is "to complement precipitation so as to produce de-



CLAUDE L. WELCH is Director of the Division of Production and Marketing, National Cotton Council, Memphis, Tenn.

sirable soil moisture conditions." But actually, aren't we obliged to consider irrigation as a special case of that broader problem of providing optimum soil moisture conditions everywhere that cotton is grown? Soil management and drainage are additional facets of that broader problem.

By way of an extreme and perhaps foolish example, suppose that drainage problems in the Delta were a great deal more acute than they actually are, and that before any agriculture could take place, fields had to be leveled and drained through extensive earthmoving processes such as are involved out here. Under these conditions that I have "supposed," wouldn't we likely find the technology of cotton production in that region about as far advanced as we find it here?

Certainly, I am not suggesting that we can, or that we should, pattern all of the Cotton Belt after the agriculture of this great region. But I am pointing out that here we have an outstanding example of how the basic environment for agriculture has been drastically and successfully modified—along with modifications of the agronomic characteristics of the cotton plant and of the equipment for producing it. And the outcome would seem to have resulted in a remarkably efficient agriculture. I am also throwing out the suggestion that if some of the problems standing in the way of more efficient cotton production in other parts of the Belt were more instead of less acute, or if they were attacked as if they required solutions of a truly drastic nature, then perhaps our progress would be hastened.

For fear that I may be misunderstood, I want to add quickly that I am neither criticizing, nor am I complaining of a lack of progress in cotton mechanization all

across the Belt. As Mr. Young pointed out to you at the outset of this conference, we have made substantial progress in the last few years—and I feel that we can justly be proud of it. As a conspicuous example of progress, I would like to remind you that only four years ago many of us were apprehensive about ginning as it related to mechanical harvesting. I recall rather emphatic statements to the effect that grade discounts for machine harvested cotton were so severe as to simply rule out the possibility of using machines for harvesting any large part of the crop. But, mainly as the result of improvements in gin equipment and in gin operation, we have seen that "rough harvested" cotton could be cleaned up. Grade discounts are still a problem, but certainly we no longer regard it as a *major* obstacle to the use of mechanical harvesters in many parts of the Belt.

The new developments which are emerging from experimental work in all phases of cotton production give us definite assurance of still greater progress in the years ahead. But—as a final thought—I would like to urge that none of us can afford to become complacent about the rate of progress we are achieving. Cotton still faces the fiercest kind of competition—and how well it withstands those competitive pressures must finally be the measure of our success.

1952 Arkansas Soybean Crop Yields Good

The 40,000 to 45,000 acres of soybeans in the Blytheville, Ark. area will make an excellent yield again this year, in spite of drouth, heavy green clover worm infestation and the usual bean leaf beetle population, reports Keith Bilbrey, county agent.

Soybeans in that area showed amazing growth and "staying power" during the long severe drouth and the Aug. 12 rain was in time to help the Ogden type bean set a heavy crop.

The green clover worm outbreak in August was well taken care of and was not as damaging as the population might have indicated. Every soybean field in the area had a green clover worm infestation, with populations running from 20 to 100 worms per yard of row. One half the soybeans were poisoned, Bilbrey estimated, but more beans were poisoned than necessary.

Texas Farmer's Experiments Produce Two Bales an Acre

More cotton from less land is the motto of C. E. Vandiver, Lubbock, Texas, farmer of 320 acres. An idea of how it is paying off this year comes from the fact that his crews picked 38 bales and 260 pounds of cotton from 25.6 acres on the first picking. From the looks of the cotton, it should average better than two bales to the acre.

Last year he was hailed out in August and made only eight bales of cotton from 11 acres of dry land.

Fertilizer, a concrete pipe irrigation system and terracing are some of the factors with which he has experimented. Also he tried ladybugs this year but poisoned when harmful insects finally got out of hand. Vandiver says much of his success comes from hard work, trying almost anything at least once, and a lot more hard work.

• Ward Urges Mills to Use Feeding Data

NCPA EDUCATIONAL DIRECTOR A. L. Ward, Dallas, has sent oil mills a letter, with a newspaper release, stressing the importance of giving livestock producers facts that show the danger of feeding cottonseed and the advantages of feeding cottonseed meal and hulls.

"There has been much concern because a few self-appointed guardians of the feeder have seen fit to advocate the use of cottonseed for feeding without realizing the potential damage which might occur," Ward's letter points out. "Those people can do little harm if each of your customers fully understands the information you have available."

He urged mills to make use of the press releases supplied by the Educational Service and to distribute the circular, "Don't Feed Cottonseed," which is available at \$1.25 per hundred copies, plus shipping charges.

2,000,000 Acres Cotton Defoliated This Season

Two million acres of cotton will be defoliated this year, a representative of USDA estimated at the recent Washington meeting of the Herbicide and Defoliant Chemicals Industry Advisory Committee.

The committee recommended to the National Production Authority, Department of Commerce, that more definite information be obtained on exported weed killers.

The committee suggested that the present "basket" classification be broken down as follows: (1) The Herbicides 2,4-D, 2,4,5-T and TCA; (2) Other organic herbicides and (3) Inorganic herbicides.

The committee also recommended that NPA make representations to the Tariff Commission to report specifically the monthly production of 2,4-D acid and 2,4,5-T acid in order to eliminate overlapping and duplication when statistics include salts, esters and amides.

A representative of the Office of International Trade told the committee that exports of chemical weed killers amounted to 8½ million pounds for the first eight months of 1952 with total exports for the year estimated at 10 to 12 million pounds. Exports chiefly went to Canada, Cuba, Colombia, Venezuela, Peru, Argentina, British Malaya and Turkey.

• Need for Preventing Accidents Stressed

OIL MILLS are urged to intensify their accident prevention efforts in a letter from Jack Whetstone, Dallas, secretary, Texas Cottonseed Crushers' Association. Whetstone, H. Wunderlich, Corpus Christi, chairman of the association's special task committee, and Horace Belev and E. B. Free, Abilene, attended a workmen's compensation insurance hearing Oct. 23 before the Texas Insurance Commission in Austin.

"We found that the loss experience on a very large number of industries in Texas, including our own, showed that the companies are due some increase in rates," Whetstone reports. "The Insurance Commission gave no indication of what increases would be allowed in the various classifications; but according to

the loss figures presented on our industry, indicated increases could be as high as 14 percent. However, we gained the impression from discussions that probably, on the whole, the commission would not allow quite this much increase.

"One fact was outstanding—our injury cases must be reduced if we are to avoid further rate increases and hope to secure compensation rate reductions later."

• Margarine Fortified in Western Germany

Margarine fortified with vitamins A and D is now being marketed in substantial quantities for the first time in Western Germany, reports USDA. This development, which began in mid September, has come about largely through private initiative rather than governmental action.

According to present estimates, nearly one-half of all margarine in the Federal Republic is fortified by the addition of vitamins, and competition is expected to spur the rest of the industry to add vitamins to its output within a relatively

short time. The prevailing level fortification is 20,000 International Units of vitamin A and 1,000 I.U. of vitamin D-2 per kilogram (1 kilogram equals 2.2046 U.S. pounds).

Producers of margarine in Western Germany have expressed their continued active interest in obtaining greater quantities of raw materials, particularly liquid oils, from the dollar area. The key problem is the shortage of dollar exchange. Fats and oils, which are obtainable also in soft currency areas, will continue to be given much lower dollar priority by the Federal Government than grains or sugar. For this reason, it is not considered likely that any substantial increase in purchases of U.S. fats and oils is in prospect for the current fiscal year.

Cotton Saves Church

When the Mount Zion Church, Pratts Community, Miss., ran into financial difficulties paying off a \$2,900 debt, the members planted a 16 acre cotton patch. Donating their labor, they harvested a cotton crop which paid off the entire indebtedness.

From Conference Speakers

QUOTES ON MECHANIZATION

■ **FOR BUSY READERS**, brief excerpts from discussions at the Sixth Annual Beltwide Cotton Mechanization Conference, Oct. 22-25, Bakersfield-Shafter-Fresno, Calif.

THINK IN MECHANIZED TERMS—"Above all, the farmer must learn to think in terms of mechanized operation. Mechanization must go hand in hand with good farm management. When a grower starts using machines he needs to reconsider his entire farming operations: his basic combinations of land, labor and capital, his choice of enterprises, how to use labor efficiently, whether to seek credit for expanding farm size and buying additional equipment, and many related things."—Harold A. Young, president, National Cotton Council, North Little Rock, Ark.

HIDDEN COST OF PRODUCTION—"Soil depletion might be called the great hidden cost of production."—R. Keith Walden, president, Farmers Investment Co., Tucson, Ariz.

SHORT DROUTHS COSTLY—"Drouths during critical periods, even though of short duration, can cause heavy crop losses. Recognition of this has resulted in the development of supplemental irrigation."—M. R. Huberty, head, division of irrigation and soils, California Experiment Station, Los Angeles.

MUST MECHANIZE TO COMPETE—"Cotton farmers simply cannot pay industrial wages and still produce cotton at a price competitive with other fibers unless productivity of labor is increased. That is why we have such great hopes for mechanization."—Read P. Dunn, Jr., director, foreign trade division, National Cotton Council, Washington.

WEED CONTROL CAN CUT MAN HOURS—"Improved methods of weed control could reduce to 10 the number of man hours required to produce an acre of cotton mechanically."—Dr. Roy L. Lovvorn, head, division of weed investigations, USDA, Beltsville, Md.

STEEL STRIKE HURT FARMERS—"The recent steel strike caused 18 million tons of steel to be lost to the economy. Those tons of steel amount to six times as much steel as was required by the entire farm equipment industry to meet production goals for 1952 as determined in 1951 by USDA."—William J. Fisher, vice-president, The Oliver Corporation, and chairman, executive committee, Farm Equipment Institute, Chicago.

IRRIGATION PAYS ON PLAINS—"The irrigated acreage on the South Plains of Texas, though only 38 percent of the total acreage, will produce 75 percent of the estimated production."—Robert V. Thurmond, irrigation specialist, Texas Extension Service, Lubbock.

MACHINES GOOD INVESTMENT—"Machines, in general, have been good investments, both in lowering our costs of production and in reducing human toil."—J. Earl Coke, California Extension Director, Berkeley.

Field Demonstration

(Continued from Page 61)

covering. Firming the seed in the moist soil aids germination.

6. Two-row Experimental Planter

This two-row runner type planter with wings also has experimental rubber covered press wheel for firming the seed in the soil. This type planter with press wheels has been used for planting all of the cotton for mechanization studies the past 3 years. It has been found that the firming of the seed in the soil with the narrow rubber covered press wheel aids in more complete and uniform germination. This is particularly helpful when planting to a stand.

7. Rotary Crust Breaker

Equipment of this type has been found useful for breaking crusts to aid in the emergence of the seedling plants. This implement is somewhat similar to the standard rotary hoe in principle. The small spikes on the small diameter wheels do a uniform job of breaking the crusts with a minimum of soil disturbance.

8. Ditch-blocker

This implement is used in making head ditches for carrying irrigation water along upper end of fields. The blocker allows the operator to place earthen dams at any interval in the ditch, depending on the slope of the land. The ditches are normally disced or plowed in after the early irrigations to allow turning at ends during cultivation. However, some growers prefer to turn across the rows leaving the ditch undisturbed throughout the season.

9. Border-disc

The border disc is another peculiar machine used in irrigated agriculture to form borders (ridges) to confine water to small blocks or strips. Often it is equipped with blockers ("dikers") which

leave small dams in the furrows on either side of the ridge. These dams help to spread the water more evenly.

10. Furrow Irrigation

Given the water flowing through a ditch running across the rows, the problem is to get that water out into the furrows—here are two common methods:

A. Straight pipes or tubes placed through the berm or bank of the ditch. The pipes may be buried by means of a shovel, or driven through the bank of the ditch with the aid of a simple driver as you see being demonstrated.

B. Siphons which lift the water over the bank and into the furrow. These siphons are made of galvanized steel, aluminum, or plastic. Note how quickly the irrigator "primes" them as he moves along the ditch.

11. Flood Irrigation

We now direct your attention to two other methods of irrigation:

A. **Border check.** Merely long narrow strips of crop between borders or small ridges. The distance between the borders depends upon the slope of the land—the greater the slope, the closer spacing of the borders. This system requires comparatively level land and large heads of water.

B. **Border Basin.** Here the field is divided into small basins by borders or ridges at right angles, formed by border discs. Here the blockers are very useful in damming the corners as the cross borders are being made. The border basin method makes it possible to hold water on land for a length of time.

12. Flame Cultivation

Here we have a two-row cultivator equipped with flame cultivator and two 10-inch sweeps per row on front gangs and 22-inch plow-out sweeps on the rear.

The front sweeps are high-speed sweeps set flat. The rear sweeps have rounded points and the wing tips are relatively flat. Three-eighths inch steel rod extensions approximately 10 inches long have been welded to the back side of the wing tips. Sweeps modified in this manner leave a broad, uniformly plowed middle irrigation furrow. The rod extensions level off the dirt at the end of the wing tips so as to leave a uniform row profile, helpful to the mechanical picker.

13. Late Cultivation

For late cultivation we now show you a high-clearance tractor equipped with wheel fenders, front gang shields, flame cultivator and rear plow-out sweeps. This type of machine can be used to flame cultivate and plow the middles in cotton much later in the season than with regular tractors without damage to plants. Cotton up to 5 feet tall and up to the time the bolls begin to open may be cultivated without damage unless the cotton is badly lodged. The front gang shields have been modified with plant lifter shields which help lift up the lower branches to allow an open path for the flame to travel toward the base of the plant. Rear sweeps similar to those on the previous cultivator are used on the rear tool bar.

The high clearance tractor can be used for early as well as late cultivation and also for off season work. Its usefulness is not confined to late cultivation.

14. Topping Machines

Next are experimental topping machines which are being used to determine whether or not topping cotton at some stage of its growth will help to prevent lodging and permit more efficient use of the picking machines in rank cotton.

15. Sprinkler Irrigation

Back of you is set up a portable sprinkler irrigation system which you may wish to observe after the field demonstrations. There is much interest in sprinkler irrigation for sloping, rolling, or unlevelled land which is unsuited for irrigation by the more common methods of flooding, furrows, and contour checks.

16. Demonstration of Mechanical Pickers

And now we come to demonstration of the mechanical cotton pickers. The mechanical picker is by far the most important machine in the mechanization of our cotton production. This year we expect around 75 percent of the California cotton crop to be picked by machine. Five spindle-type cotton pickers arrived in California in 1943—but that original brood has increased a thousand-fold.

In the adjacent fields reserved for the picking demonstrations you will see these seven mechanical cotton pickers at work: Allis-Chalmers, one-row and two-row; International, one-row, two-row, and low drum; John Deere, two-row; Rust, one or two-row.

Sharp Increase in Israel's 1951-52 Oilseed Output

Israel's production of vegetable oilseeds during 1951-52 has been estimated at 10,200 short tons, or almost three times the 3,620 tons produced in the previous season, says USDA. The expansion in acreage devoted to oilseeds and adequate rainfall during the winter of 1951-52 were responsible for the larger oilseed output.

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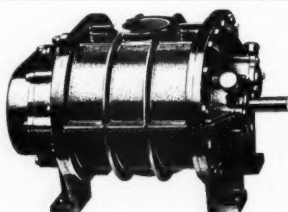
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Cotton Irrigation Panel

(Continued from Page 56)

irrigation was done in central Arkansas as early as 1930, at which time cotton yield increases were considerable and corn yields were as high as 80 bushels per acre.

The depression of the early 1930's discouraged supplemental irrigation of dry crops due to low prices; however, with the favorable markets of 1940 and later years, our farmers started looking for means of producing greater crop yields and supplemental irrigation was again started. Agricultural Extension records for 1946 show that 16,000 acres of dry crops received supplemental irrigation. The year 1947 was a relatively dry year and irrigation of dry crops increased to nearly 40,000 acres. Even in 1950, with 60 inches of rainfall, over 38,000 acres of dry crops were irrigated. The dry summer of 1952 has again revived farmer interest in irrigation of dry crops.

In a study for the Arkansas-White-Red River Basin report on irrigation, it is shown that well over 1,000,000 acres of dry crops in Arkansas could and should be irrigated. The Arkansas Experiment Station is now doing research work on irrigation of dry crops to determine the effect on yields of cotton through the addition of supplemental water by irrigation. Our results, though not conclusive, show favorable cotton yield increases resulting from irrigation.

On various demonstration farms in Arkansas, irrigation has multiplied yields by $3\frac{1}{2}$ times for Kobe lespedeza, 3 times for green beans, $1\frac{1}{2}$ times to $2\frac{1}{2}$ times for cotton, and $3\frac{1}{2}$ times for tomatoes.

Arkansas' experimental work on supplemental irrigation was started in 1949 and several interesting results have been obtained:

1. Rates higher than one-half inch per hour resulted in excessive run-off when two inches of water were applied.
2. The application of two inches of water resulted in an excellent stand during early drought in 1950.
3. Irrigated cotton had 20 percent fewer bolls in a 10-foot row on Aug. 18; however, the same irrigated cotton had 56 percent more bolls on Sept. 9.
4. Irrigated cotton at the 60 percent available water level had 25 percent more bolls than cotton irrigated at the 30 percent available moisture level.
5. The drought in 1952 resulted in early irrigation of cotton in eastern Arkansas and irrigated experimental plots showed cotton plants of full vigor and at least twice the height of non-irrigated cotton.
6. The use of fertilizer with irrigation showed increases of 14 percent to 33 percent even in wet years.
7. The largest increase in yields resulting from irrigation and fertilizer occurred at 400-pound and 800-pound per acre rates.
8. Work on fruits and vegetables near Van Buren and Hope resulted in an 86 percent increase in sweet potatoes and 82 to 93 percent increase in some varieties of string beans.

These favorable crop increases indi-

cate that irrigation will grow rapidly in our state, and farmer interest is shown by annual acreage increases and large attendances at all irrigation demonstrations. Due to an abundance of ground water in the eastern portion of the state it is expected that wells will be used as a water source in the near future; however, the consistent and rapid decline in our water table, in our rice growing areas where heavy and concentrated pumpage has occurred since 1910, indicates that ground water cannot be considered as an inexhaustible source of irrigation water. In fact, in nearly all cases where wells are depended on for concentrated irrigation there is a definite indication that the supply of ground water is inadequate. This fact shows the importance of developing surface water supplies. One of the most interesting developments in Arkansas is the work now being done on the possibility of using our surface water as a means of recharging our ground water reserve. It is planned to use a system of horizontal collectors, as developed in the Ranny System, with the White River as a surface water source to recharge the depleted aquifer in our rice growing area. If the recharge program proves successful it will be usable in many areas where present ground water supplies are inadequate.

Through the use of irrigation, Arkansas will increase its cotton production or grow its share of cotton on a decreased acreage permitting the development of other farm crops including livestock.

R. V. Thurmond

Irrigation Specialist, Texas Agricultural Extension Service, Lubbock.

IRRIGATION has grown by leaps and bounds in Texas during the past 10 years. According to the census the number of acres irrigated increased from 1,045,224 in 1939 to 3,148,115 in 1949—a gain of more than 200 percent. This increase occurred chiefly in the High Plains area where all irrigation water is obtained from wells.

The High Plains area of Texas is located in the northwest portion of Texas. The elevation ranges from 3,000 to 4,000 feet, and there is an average yearly rainfall of from 18 to 20 inches. Approximately 80 percent, or better than $15\frac{1}{2}$ inches, of the average yearly rainfall comes during the growing period—April through October. This amount of rainfall approaches the lower limit for successful dry land farming. Lack of soil moisture has been the principal factor limiting crop production on the High Plains.

Development of ground water for irrigation started in the Plainview area in 1911, but only 2,000 wells had been installed by 1940. Development during World War II was slow because materials were not available; however, by 1945 there were approximately 4,300 wells being used to irrigate some 500,000 acres. Today there are an estimated

18,000 irrigation wells being used to irrigate some 2,500,000 acres.

Withdrawals of water from the ground water reservoir for irrigation during 1952 are estimated to be 2,500,000 acre feet. With the increase in irrigation, ground water levels have been lowering. A portion of a 21-county area designated by the Texas Board of Water Engineers under the local option ground water law passed by the State Legislature in 1949, contains 6,815,000 acres. Records show a decline of five feet, or less, on 78 percent of this acreage during the period 1938-51.

The average cost of developing and equipping irrigation wells in the area ranges from \$4,000 to \$6,000. The average well delivers approximately 650 gallons per minute and will furnish enough water to irrigate about 120 acres. Pumping costs vary from \$5 to \$15 per acre foot, depending on lift, type fuel used, and amount of water pumped per season.

Irrigation farming in most cases on the High Plains has been a matter of applying water to land that had previously been dry farmed. With the change from dry land farming to irrigation farming, many new problems have been encountered by the farmers. Irrigation has required more farm labor and additional expenditures for equipment and land preparation.

Cotton is a very important crop in this area. This year there are about 1,115,000 acres of irrigated cotton. This acreage comprises more than 45 percent of the total irrigated acreage of all crops.

Most all cotton is irrigated by the furrow method. Only a very small percentage of the cotton acreage is irrigated by the sprinkler method. This method is used only on the very sandy soils and on land where the topography is unsuitable for surface methods.

Farmers on the High Plains have been fortunate in having fertile soils; however, with increased production under irrigation there are sure to be fertility

**HEARD
ABOUT
PLAINS
COTTON
?**

problems. In order to maintain yields that will make irrigation profitable, farmers must constantly be aware of the need for maintaining a high fertility level of the soil.

Water conservation is important in this area inasmuch as the ground water supply is not inexhaustible. Design of irrigation systems which provide for conservation of natural rainfall and efficient irrigation are most desirable. Pipe lines to replace open ditches, to prevent water loss through seepage and evaporation, are becoming popular.

Irrigation plays an important role in cotton production on the High Plains of Texas. It is estimated that eight to 10 percent of the 1952 United States cotton crop will be produced within a 75-mile radius of Lubbock with a production of 1,460,000 bales. This includes both dry land and irrigated cotton. It is interesting to note, however, that the irrigated acreage, though only 38 percent of the total acreage, will produce 75 percent of the estimated production in the High Plains area.

Irrigation has not only stabilized crop production to a large extent, but has provided new wealth to business and farmers alike.

Harold C. Schwalen

Head, Agricultural Engineering, University of Arizona, Tucson.

PRODUCTION of cotton in Arizona, on approximately 670,000 acres in 1952, promises to become the leading single industry in the state in terms of gross value. Last year it almost reached the record-breaking \$203,000,000 value of copper production, which was about 45 percent of the total United States production. This year, cotton is almost certain to exceed the value of copper, and possibly the total gross value of the mineral production of the state.

The limiting factor in the agricultural development of the state is water. At present, with only slightly over 1,100,000 acres under irrigation, practically every available source of water, except that of the Colorado River is being utilized. Most important in this connection is the fact that in the principal cotton producing areas, a large part of the water supply is pumped from groundwater storage. It has been realized for some years that the annual rate of withdrawal from many of these underground storage reservoirs has been at a rate greatly in excess of their rate of recharge.

For the past two years per-acre yields of cotton in Arizona have been the highest in the United States. Thus increasing water costs with higher pumping lifts have not discouraged further expansion in irrigated cotton acreage. Shortage of water, however, has emphasized the importance of efficient use of water in order that the largest acreage possible may be placed in production.

Practices which have been most important in improving efficiency in use of irrigation water are:

- (1) Land leveling programs which have resulted in more uniform application of water and the elimination of tail water runoff. In general, slopes have been reduced.
- (2) Ditch lining programs with greatly reduced seepage losses, and tight gate structures to eliminate leakage.
- (3) Use of spiles or siphon tubes for

accurate control of the flow into individual furrows.

(4) More intensive programs for weed control to promote saving of water and also to improve efficiency of mechanical pickers.

In a few cases where excessive tail water could not be prevented, farmers have installed pipe lines and pumped this water back up to the head ditch. Other farmers have practiced skip-row planting and irrigation in alternate furrows in an effort to make a limited water supply cover the largest possible acreage. Whether this practice results in a greater net return to the farmer than the normal irrigation and planting has not been definitely determined.

W. P. Law

Associate Engineer, South Carolina Agricultural Experiment Station, Clemson.

IN THE Southeastern part of the United States one problem that every farmer faces is excess precipitation at certain times. This may prove to be the number one problem with respect to cotton irrigation, as this crop is probably at least as sensitive to an excess of moisture as to a deficiency. A spring rainfall of 10 to 14 inches, a summer rainfall of 14 to 18 inches, and a fall rainfall of 8 to 10 inches would appear to be ideal for cotton production when it is properly distributed. However, this is an extremely rare occurrence. Besides having too little at times, we have too much at other times. Remedying the deficiency will often aggravate the troubles caused by the excess. Excess moisture produces rank, spindly growth, poor yields, and late maturity. Rank growth increases the difficulty of insect control, and second growth complicates picking.

Lack of economical water sources is a definite limitation in most cases. The use of year-round streams is limited to the land within a few hundred feet of these streams, and is even then complicated by legal problems. Revised legislation with regard to water rights is a problem many of our states will be facing soon. Surface-water reservoirs large enough to irrigate extensive acreages require sites and capital not available to many farmers. Wells are often successful, but are practical only in parts of our Coastal Plains and a few river valleys.

Mechanization of cotton has been a recent drain on the available capital of our more progressive farmers. There are other demands on the farmer's available capital. Much of our cotton is still produced by mule and manpower, without insect control, and without proper fertilization. We may have to make more progress along some of these lines before we go very far with irrigation on many farms.

Many of our growers still have a short-range viewpoint: They want full return on an investment in one or two growing seasons, not in four, five, or six years. This attitude is weakening fast, however, as is evidenced by our swing to mechanization and livestock production.

Due to labor problems, many of our farmers at present lean toward extensive farming practices. Irrigation is certainly not among these.

Sharecropping raises problems. A tenant is not often interested in buying equipment to fit another man's farm, and the owner is not as interested in making the investment since the share-

cropper is carrying part of the risk of crop failure.

These are probably the major problems. Other problems are: Land is comparatively cheap and low in productivity in the Southeast. This does not encourage high investment per acre. Fields are commonly small and irregular in shape and slope, making irrigation difficult on many farms. Crop losses due to factors other than moisture deficiency are rather common. These include excess rain, windstorms, and insects.

This formidable list of problems is not taken too seriously by our more ambitious and progressive farmers, and certainly does not mean that cotton will not be irrigated on a substantial scale in the Southeast. Many of the same problems apply to other crops which are already being irrigated very profitably. In fact, a few farmers are already trying irrigation on their cotton in South Carolina. We have seen some of this cotton and it was excellent, well balled and still blooming, while the unirrigated fields alongside were much lighter balled, had long since stopped blooming, and many of the mature bolls were opening prematurely and would inevitably rot. No yield data is yet available on irrigated cotton, but statements by farmers indicate expected yield increases due to irrigation are up to a bale per acre. It should be mentioned, however, that this summer was unusually hot and dry.

Why are farmers, including cotton farmers, turning to irrigation in spite of the many problems it raises? The reason is simple: When your crop needs water, it usually pays to supply it, occasionally paying enough in one season to repay the cost of the system.

We expect irrigation to continue to grow in the Southeast as it has since portable pipe became generally available, and cotton may be one of the major crops irrigated.

Charles H. Sorter

Peerless Pump Company, Fresno, Calif.

IBELIEVE that the average cotton farmer is more concerned about his water supply than the technical aspects of pumping. More than likely he is satisfied to leave it up to his pump designer to provide him with adequate equipment to do the job.

So, instead of getting technical about pumping, I would like to make a few general remarks about water and water conservation. We must very soon come to an understanding of the importance of water in our agricultural as well as industrial life, and we must know more about how much water actually is available and what the potential need for water is in each area. This logically calls for surveys of water supply and demand in each region that comprises an individual watershed.

The federal government has understood this problem for some time, but has gone about it in a rather feeble way and has been inclined to bring into it political factors which should definitely be left out of technical surveys. Therefore, it seems to me that the farmer should be alerted to the need for a more unbiased and non-political approach to the subject, and this can only be brought about on a grassroots basis. In other words, my point is that the individual landowner should be sufficiently interested in his water supply and potential needs to pay the cost of an impartial

and competently conducted water potential survey for his region.

Another problem on which I would like to comment is this: Wherever irrigation is practiced there is a tendency for the soil colloids to be eroded from the soil and carried from the areas of high elevation to those of relatively lower elevations. This results in changing the character of the soil from the high end to the low end of the irrigation plot, with the low end becoming constantly heavier and heavier, and the upper end becoming constantly lighter and lighter. During the tenancy of a single farmer this might not be a matter which would be greatly noticed. But we have observed here in the San Joaquin Valley over the past 40 or 50 years some very drastic changes in soil character due to irrigation. With irrigation becoming as popular and common as it is, this problem should be brought to the attention of farmers.

Another item which is becoming quite important is the use of overhead sprinkling equipment for irrigation, both as a supplemental and a full irrigation method. This is going to make possible the irrigation of many, many square miles of land which heretofore have been unirrigated. Thus we will need to make better use of our existing water supplies in order to make them go round over the greatly expanded acreage to be watered.

Certainly we should do everything possible to make the cotton grower cognizant of the trend of irrigation and its probable effect on his future.

Weed Control Panel

(Continued from Page 60)

application machinery for both pre-emergence and post-emergence chemicals are more exacting in the rougher topography of the Southeast. As the machinery is improved and the practice becomes more reliable many farmers will use chemical weed control measures to an advantage.

The practice of weed control by flaming has not been accepted by farmers in Alabama. The probable reasons for failing to use this method are:

1. Requires special equipment and fuel. L. P. gas in this state costs from 12 to 16 cents per gallon. This is almost double the price of L. P. gas in the Delta and Texas areas.

2. The limited amount of experimental work done by the Alabama Agricultural Experiment Station did not produce satisfactory grass control in cotton. One of the reasons probably is that cotton planted for mechanical harvesting is planted flat and not on beds as in the Delta.

3. Combinations of flaming and mechanical weed control may eventually prove satisfactory, but to date the practice of flaming has not received acceptance by farmers in the state.

E. Buford Williamson

Agricultural Engineer, Delta Branch Experiment Station, Stoneville, Miss.

OF ALL THE major problems in cotton mechanization, weed control, in my opinion, continues to be the major barrier blocking the complete mechanization of cotton in the Mississippi Delta. Uncertain weather conditions, which

often confront us with long periods of excessive rainfall, still cause the control of weeds to be one of the most hazardous and costly phases of cotton production.

Until recent years, the most satisfactory method of weed control in this area had been the practice of hoeing or chopping by hand and rolling dirt into the drill with cultivator sweeps or shovels to cover small grass and weeds. Mechanical blockers and check planters were early mechanical devices used in attempting to eliminate or reduce hand labor requirements in cotton production, but neither proved to be the answer.

Recent innovations in weed control have consisted of flame burners, rotary weeder, cross-cultivation and herbicides.

We have found that the use of mechanical devices, flaming, or cross-ploving will not entirely control weeds, either alone or in combination with each other. Thus our greatest potential hope for reaching a high degree of mechanization in weed control may reside in the use of herbicides, either before or after emergence.

Chemical weed control was used experimentally in the Midsouth area from 1947 to 1951. In 1952, two compounds, dinitro and chloro IPC, were used as pre-emergence materials by a number of farmers. The dinitro compounds, which were used on a much larger scale than the chloro IPC materials, apparently caused considerable injury to young cotton that emerged during hot, dry weather in the latter part of April and early May. This damage, which ranged from light injury to complete eradication, caused the future of chemical weed control to look rather dark. However, it should result in more cautious use of any chemicals until exhaustive research has proved them safe for large scale use.

In applying pre-emergence chemicals a variety of wide rollers modified press wheels and shoes have been used ahead of the spray nozzles in an effort to obtain an extremely smooth seedbed. However, severe crusting following heavy

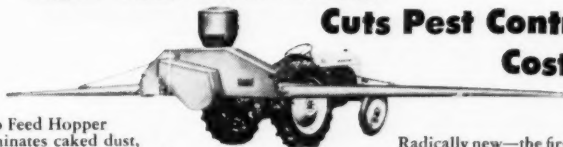
rains challenges the true benefits of these rollers, and they may have to be eliminated. Since application of pre-emergence materials slows down planting operations, improved mixing and loading methods may also have to be developed.

Post-emergence herbicides were used on smaller acreages than the pre-emergence materials and very little damage was reported from their use. The application of post-emergence materials requires high type supervision, however, and it is particularly essential that beds be uniform and level across the top. Application equipment must be carefully set. Post-emergence material has been applied satisfactorily with a fan-type nozzle mounted on a parallel action gauge shoe attached to the cultivator gang beams. The shield type gauge shoe also protects the drill area from fresh soil while middle cultivation is accomplished simultaneously with application of the material. Timeliness of application is particularly important since the maximum kill of weeds and grasses is accomplished when the post-emergence materials are applied as close to the seedling stage as possible. Post-emergence applications are comparatively lower in cost, but nozzle settings are more critical since a high setting usually produces damage to the cotton seedlings and low settings give little control.

Pre-emergence and post-emergence treatments have been used separately and in combination with flame. Flame cultivation, a comparatively cheap operation, is especially effective in mid- and late-season weed control. Late weed and grass control is especially necessary for effective operation of mechanical pickers, as well as in reducing future weed populations from late maturing weeds.

Although there have been disheartening setbacks, remarkable progress has been made in the use of herbicides and flame in the relatively short time that they have been used, and with continued cooperation between experiment station personnel and industry, mechanization is moving ahead.

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Dr. Paul J. Talley

Chief Agriculturist, Lion Oil Company, El Dorado, Ark.

WEED CONTROL in cotton production by means of herbicides is a rather recent development. One might say that it is not over five years old at the present time. On a field basis it is essentially a three-year-old infant. After this short span of years a realistic evaluation of the accomplishments of herbicides as far as the practical cotton grower is concerned can be summarized by saying that herbicides have killed or prevented the growth of many of our weeds and grasses which grow so abundantly along with the cotton in our fields. It would not be fair to omit the statement that some cotton has been killed by the improper use of good herbicides or by the use of improper herbicides.

We would like to believe that no more cotton will be killed by herbicides in the future. Unfortunately, such a statement would be overly optimistic. Weeds, grasses and cotton are not the only things that have gone by the board during the short career of herbicides in cotton production. Many preconceived notions based upon no data or insufficient data have likewise become fatalities and a general knowledge of how herbicides act and which kinds and types offer the most immediate promise in cotton production has gradually been developed.

It can be said that the developments during the last few years in the use of herbicides in conjunction with cotton production justify the statement that the herbicidal control of weeds and grass in cotton has actually arrived and that herbicides, when properly employed, can be a major factor in lowering the cost of cotton production and in decreasing the man hours required to produce our annual cotton crop.

It will undoubtedly be several years before herbicides have replaced the hoe in cotton production to the same extent that tractors have replaced the mule. Herbicides have already entered into the

practical production programs on many plantations. This practice shall continue to grow on these plantations and in turn can be expected to become more universal throughout the Cotton Belt. With the herbicides that are now available, a practical herbicidal program is possible and actually exists on many plantations. Even if research failed to develop newer and better herbicides or better methods of using the ones that are now available, the place of herbicides in cotton production in the immediate future cannot be doubted.

Before herbicides become a routine part of every production plan, certain changes must be made in the thinking of cotton producers. This change in thinking must be accompanied by a clear realization of the biological principles involved in weed control. In all too many instances an understanding of what can and what can't be incorporated into a production program in which herbicides are being employed is altogether lacking.

There is a common tendency to consider an application of a herbicide, either a pre- or post-emergence herbicide, as being a substitute for a once-over hoeing of the crop. The successful and accurate application of a herbicide can accomplish everything that is being accomplished by a once-over hoeing. In addition to that, it can be a long step toward a lasting seasonal type of control which never was and never will be obtained by hoeing. In all too many instances a large portion of the contribution which could have been obtained from the use of herbicides has been undone by the reversion to tillage practices which have been in existence for over 200 years.

It cannot be stated too emphatically that the amount of successful herbicidal use in the next five or 10 years will be determined to a large extent by the educational and instructional programs which must be developed and carried out by such agencies as the Extension Service and any and all others that are in a position to assist and contribute in getting the right information to the producer. That alone will not be enough. The

farm and plantation owner or manager must realize that his proper and successful use of herbicides will be dependent upon how successfully he understands the principles of weed control by means of herbicides and actually incorporates these principles into his production program. He must realize that herbicides can free him from his dependence upon a large amount of low-grade but high-priced hoe labor—but only if and when he supplements his present farm management by the injection of some additional upgrading in technical knowledge of his foreman and his tractor drivers. The successful use of herbicides can make possible a tremendous decrease in the amount of hoe labor required to produce cotton; however, it cannot accomplish this role unless the necessary technical knowledge is absorbed by all those concerned in the production of the crop.

Every new advance in cotton production during the last three decades has been associated with the development of new equipment and machinery. In a few instances certain advances have been delayed and retarded by the lack of appropriate equipment or machinery. At the present time it can be stated that weed control by means of herbicides has presented certain problems which must be settled by the development of new types of equipment and by the incorporation of some additional devices into the equipment which now is available to cotton producers. I do not believe it is out of order to say that satisfactory tillage equipment to be used in conjunction with herbicides has not been developed. If the equipment manufacturers care to look at it from the marketing angle, I believe a careful analysis of the accomplishments of herbicides up to this date will indicate that an excellent potential market exists for any item of equipment which will permit farmers to more easily and accurately apply herbicides—and to till the crop in such a manner as not to undo the lasting good that the herbicides can, will and are doing at the present time.

H. P. Smith

Agricultural Engineer, Texas Agricultural Experiment Station, College Station.

NO MAN who has labored long and hard to prepare the seedbed and plant a crop of cotton can justify turning it over to the weeds.

Weeds in a cotton field are robbers. They rob you by reducing the yield; they rob you by reducing the quality of the crop; they rob you by harboring insects that damage the crop and they rob you by cutting down on the land values.

Wherever cotton is grown there is a weed problem. This is true in the Southwest where there is a wide range of climatic conditions, soil types and differences in elevation. The variation in annual rainfall ranges from around 45 inches in Eastern Texas and Oklahoma to less than 10 inches in West Texas, New Mexico and Arizona. The temperature ranges from semi-tropical in the Lower Rio Grande Valley to sub-zero in North Texas and Oklahoma. This vast region with all these influencing conditions naturally creates differences in the weed problem.

In general, we can place the most important weed pests into three classes. In order of importance we have, first,

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the annual grasses; second, Johnson grass; and third, the broadleaf weeds. The ranking annual grasses are: brown top millet, crab grass, Colorado grass and Russian thistle. The habitat of Johnson grass is so widespread that it is placed in a class by itself. In the broadleaf class we find the pig or careless weed, cocklebur, morning glory, and sunflower. Of course, there are many other grasses and weeds we cuss in certain areas. Among these are such pests as nut grass, trumpet vines and bindweeds.

In the main the most commonly used methods of weed control in the Southwest are the hand hoe, and cultivation with sweeps on tractor-mounted cultivators. Studies made in the various sections of Texas show that, in 1947, the hours of hoe labor per acre ranged from about 3½ hours in the High Plains to around 18 hours in the Northeast Sand Lands and the Lower Rio Grande Valley. Hoe labor in other areas ranged in between these figures. For example, hoe labor in the Rolling Plains area was 5.4; Corpus Christi, 6.2; the Grand Prairie and the Blacklands, 9; and the Coastal Prairie, 10 hours. The number of cultivations with sweeps will range from one to three in the High Plains to a half dozen or more in the more humid and warm irrigated areas.

The use of the rotary hoe for controlling annual grasses and weeds is rapidly expanding. Where cotton is planted "in the furrow," as in Northwest Texas and Western Oklahoma, rotary hoes attached to lister cultivators are very popular. Other areas, particularly the Blacklands, prefer the cultivator attachment.

The pre-emergence application of chemicals is used only to a limited extent. The frequency of rainfall directly following planting is not sufficient to make pre-emergence application of chemicals reliable. Don Jones of Lubbock states that he has tried pre-emergence for three years without benefits. It has greater possibilities of success in the Coastal Prairie area around Victoria.

The post-emergence application of chemicals is a fairly fool-proof method, as "oiling" works generally any place cotton is planted on the bed and the surface adjacent to the plants prepared properly.

The methods of applying chemicals must be adopted to the cultural practices used in growing cotton.

Generally, flame cultivation has not proved economical in the dry farming areas of the Southwest. A limited number of weeds are left for the flame to kill after other control measures are used prior to the stage of cotton plant growth when flame can be used without crop damage. Flame is being used by some cotton growers in irrigated areas where cultural operations are used to prepare the soil surface for flaming.

It appears that best control of annual grasses and weeds can be obtained in the non-irrigated areas of the Southwest by the early use of the rotary hoe followed by applications of oil as a spray.

J. R. Tavernetti

Agricultural Engineer, California Agricultural Experiment Station, Davis.

THE MECHANIZATION of cotton growing in California has been concentrated on thinning, harvesting and weed control. Equipment and methods

for the elimination of hand labor for thinning and harvesting have progressed to the point where they are being generally used. Thinning can be done by mechanical choppers or eliminated entirely by planting to a stand. Harvesting is being done by mechanical pickers, of which there are four different makes now being manufactured. Weed control, however, remains as the operation which has not been completely mechanized and although progress has been made in eliminating hand labor for this purpose, such labor still is necessary in many instances. The principal progress in the mechanization of weed control has been the development of equipment for late cultivation and for flaming.

Late cultivation is cultivation after the normal "lay-by" time or after the time the plants have become so large that more damage than good is done by the regular cultivating equipment. This time is usually about the middle of July and since irrigation is continued until about the first of September, late weeds may be a serious problem. The equipment for late cultivation requires two main features, high clearance and shields. By high clearance is meant sufficient height under the tractor to prevent knocking over the plants. A clearance of about 36 inches under the rear axle has proved sufficient for most cotton but still is not so high that mounting of the cultivating equipment is a serious problem. Proper shielding of the wheels, cultivating equipment and other parts on which the plants may catch and be damaged is a necessity. In tests at the Shafter Experiment Station, cotton was cultivated for a month after normal "lay-by" time without affecting the yield.

Control of weeds in the drill row where cultivating cannot be done is still a major problem. A partial solution for this problem is the use of flame or heat which is limited by the size of both the cotton and the weeds. It cannot be used before the cotton is eight to 10 inches high and is most effective on small seedlings and grasses. Other factors affecting its use have been that the equipment is not generally available; operators have complained of the heat; and care and experience are necessary for best results. However, good results have been obtained when it has been used properly at the right time. Although flaming is not yet a common practice, more growers are using it each year.

Chemicals for weed control have been tried experimentally, both as pre-emergence and post-emergence sprays. While some promising results have been obtained in these experiments, no general recommendations have been made for their general use by growers. Considerable work remains to be done on the best materials to use and methods of application. Their greatest promise seems to be in controlling the weeds from the time the cotton is planted until it is large enough for flaming.

Frank Fletcher

Cotton Farmer, Tamo, Ark.

AFTER USING the post-emergence method of weed control for three years, I have some suggestions to offer.

The first step is choosing the land on which it is to be used. The heavier soil (clay or buckshot) which grows weeds

and tie vines is not a desirable type of land on which to use herbicidal oil. Sandy loam land or mixed land, which grows largely crab and nut grass, is a natural for herbicidal control.

In the preparation of this sandy type land I am partial to flat breaking. Disking several times just ahead of the planter is also good. This thoroughly shreds the old stalks and roots. More desirable still is to run a stalkshredder ahead of the flatbreaking plow. After thoroughly shredding the stalks, the next step is to mark off the land with either a two- or four-row cultivator instead of a middle buster. A three-row middle buster just does not work when it is to be followed with a two- or four-row planter.

In using the post-emergence method of weed control, the time of planting should be postponed until the ground is warm in order to enable the cotton to come up and grow off in a hurry. This enables one to make his first post-emergence application while the vegetation is very small and easy to kill.

Hill-drop planting is a must with post-emergence. I think it is a good idea to put from six to 10 seed to the hill. This will insure a good stand. Depth of the hill dropping should be determined by the type land and the expected weather conditions immediately after planting. I like to cover all seed to about one inch in depth.

Any conventional cotton planter can be converted to serve as a planter and roller by merely spreading out the two sections of the press wheel and covering them with a sheet metal cylinder. This serves the same purpose as a roller that flattens out and leaves a wide smooth surface on top of the bed. This same type of bed can be made by using the conventional cotton planter and following, as a separate operation entirely, with a smooth roller. However, this is a separate operation and adds to the overall expense.

There are several different types of applicators. In my opinion the original sled or shoe built by Gotcher Manufacturing Company is the most practical.

As to the rate of application, any user should follow the recommendation of the company that makes the product. I used Lion Herbicidal Oil, at the recommended rate of five gallons per acre for each application. This I have found to be very satisfactory.

The first post-emergence application should be made as soon as the cotton is tall enough to keep from spraying the oil into the bud. This is most practical when cotton is three or four inches high and the grass and weeds are barely visible.

The second application of herbicidal oil should be applied as needed to handle new growth of grass. In no case should you use less than five-day intervals. Under normal conditions, seven-to-10-day intervals should be the minimum.

The third, and in most cases the last, application should be spaced at about the same interval as the second application. Under no circumstances apply the oil after the bark on the stalk begins to get rough and porous. But it is possible that a fourth application can be used to good advantage.

I think it very necessary to follow the herbicidal oil with a flame cultivator. This treatment can be used as many times as needed to control late grass and weeds.

World Cotton Situation

(Continued from Page 26)

in per capita cotton consumption as the population increases.

Exports of cotton textiles, including piece goods and manufactured articles containing cotton, have been the equivalent of about three-quarters of a million bales of raw cotton for several years now. Many foreign markets are now being closed to U.S. exporters by artificial trade restrictions, but we all hope and trust that these trade barriers will be temporary. As international competition in textiles increases, American mills are getting more and more efficient and more and more competitive. Therefore, if we can assume some improvement in general trade conditions, it seems logical that textile exports may be held at about their present level.

The military will continue to use a considerable amount of cotton. If the military establishment is maintained at about its present size, an annual cotton requirement of some half a million bales seems to be a conservative estimate for the long run.

So you see it is not unreasonable to think of domestic consumption being up around 10 or even 10.5 million bales 10 years hence.

• **Foreign Market:** Now let us look at the foreign situation. In the first place, it is important to recognize that the United States and Canada, with only 7 percent of the world's population consume more than one-third of the world's textile fibers. In the rest of the world per capita consumption is at a much lower level and does not change for quite the same reasons as in the United States and Canada.

The per capita consumption of all textile fibers has just recovered to the pre-war level for the world as a whole. Some

areas such as Europe, South America and parts of Africa show a slight increase, but the large populous areas of Asia and the Far East are still significantly below prewar. Important textile countries such as Japan and India are consuming only about three-fourths as much as prewar.

Over the years the consumption of textile fibers throughout the world has been increasing at a rate of about two percent per year, most of which is due to the growth in population. The rate has not been uniform by countries. Neither has it been constant. Nevertheless, in the long run it is logical to anticipate that the consumption of all fibers will expand at least as fast as in the past.

The most important factor in the demand for textiles unquestionably is income. World income has been increasing at an average rate of about two percent per year for several decades. In many countries the rate has been much higher.

There are some indications that in the populous undeveloped countries, improvements in the standards of living in the immediate future may be even more rapid than in the past. And improvements in per capita income in low income countries would in all probability reflect high proportionate increases in expenditures for clothing.

With the application of capital, management and labor in efficient production organizations there is no doubt but what purchasing power can be increased and market opportunities developed for textiles throughout the world.

Income, however, is not the only means through which the consumption of textiles may be increased. In the United States it has been demonstrated that research and promotion may be effectively used as a means for increasing the con-

sumption of textiles. These techniques have certainly proved effective in holding and in strengthening cotton's position among the textile fibers.

Illustrations of the possibilities of expanding markets and increasing the consumption of cotton textiles throughout the world are legion. Take the low income area of Southeast Asia, with a population approximately equal to that of the United States. The consumption of cotton textiles is only about 5 percent of what it is in the United States and only a third of the world average. It is only about 75 percent of prewar on a per capita basis. Potential fiber consumption in this area is tremendous. It is an area rich in natural resources — petroleum, coal, rubber, timber, metallic ores, and agriculture. The world needs the products of this region. Let's suppose that purchasing power could be raised high enough through development of the natural resources of this region to allow textile consumption to increase up to the world average. If this came to pass, there would be a market outlet for an additional two billion yards of cotton goods—more than a third of the total volume going into international trade today.

Possibilities of expanding textile consumption in the Middle East are just about as good as in Southeast Asia. Here again the population of the region is about as great as in the United States, and the consumption of textiles, though higher than in Southeast Asia, is generally below the world average. Consumption in this area can conceivably be doubled—at least it can be increased by nearly a billion yards.

Possibilities of expanding textile consumption in Europe are even greater. Europe has a population nearly twice that of the United States and also has a tremendous supply of raw materials if colonies, territories, and possessions are considered. Europe also has about as much technical "know-how." Effective organization of these human and physical resources would greatly expand markets at home. To illustrate the potential demand for textiles in Europe, assume that Europe as a whole was able to increase cotton consumption to about half of what it is in the United States. This would create a market for another 6.5 billion yards of goods annually. This is far more than the total exportation of all cotton textiles today.

Japan is another area where consumption could be greatly expanded. Consumption of cotton textiles on a per capita basis is still below the world average and less than half of what it was during most of the 1930's. Increased purchasing power in Japan permitting per capita consumption equal to the average level of the 1930's would create a market for an additional billion yards of cotton goods annually. This is equal to the total exports of cotton textiles from Japan today.

These illustrations merely serve to show the magnitude of the opportunities for increasing the consumption of cotton textiles. Others could be used for the rest of the world—even in the principal cotton producing countries of South America and Africa.

It is especially significant to note that the world's textile leadership is now intensely interested in developing promotional programs to increase the consumption of cotton. At the recent International Cotton Textile Conference in England, where some 85 percent of the



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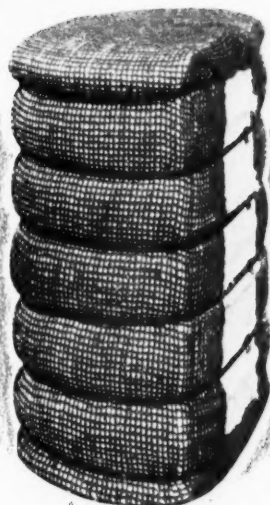
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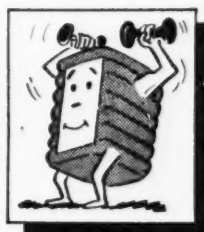
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world textile industry was represented, a strong aggressive and forward-looking program to increase cotton consumption was adopted along the following lines:

(1) Research, advertising and promotion to create new end use markets for cotton and to strengthen cotton's position in present markets.

(2) Economic development and increased purchasing power to be accomplished by employing more capital, by achieving greater efficiency and higher labor productivity.

(3) Lower prices for cotton textile products through greater efficiency in production and distribution (particularly in the clothing field), specialization, and optimum utilization of equipment.

Many of the leading groups represented also proposed the reduction of trade barriers that now throttle distribution and restrict consumption. The countries of Western Europe are already planning a joint program to advertise and promote cotton consumption. They are also active in trying to increase efficiency.

If total fiber consumption outside the United States continues to increase in the future only at the rate it has in the past—at some two percent per year—this would mean an over-all increase of 20 percent every 10 years. If cotton holds its own in the world fiber market, and if the past trend continues, there will be a market opportunity for another 4.5 million bales of cotton in say, 10 years from now. If programs for economic development in under-developed countries materialize, the market opportunity might be considerably larger.

Now as most of you know, we have made very careful studies of the possibilities and prospects of producing cotton in most all the countries outside the United States and we are convinced an expansion of anything like four or five million bales is most unlikely in the immediate future.

Every country growing cotton has been making strenuous efforts to expand production and the colonial powers in

Europe, in their drive to conserve dollars, have been pushing cotton production at every opportunity. But the crop outside the United States is still no larger than it was in 1935-39.

Let's take a quick survey of the major areas. In the temperate zones of the northern hemisphere there are two groups, the old and the new. India is an excellent illustration of the old. With practically all of its arable land now in use and with population increasing at the rate of 7 million people a year, it is almost impossible to expect India to be able to divert much of her land from food to cotton. Increased cotton production here must come largely through improving yields, which is a slow process. The same is naturally true of China and Egypt. Some of the new cotton producing countries such as Mexico, Pakistan and the Middle East, where the land resources are much greater in proportion to the population, do have considerable opportunity for expansion. However, in the dry farming areas most of the arable land is now under cultivation. The greatest opportunities are in the semi-arid regions where it is necessary to construct new and costly irrigation facilities. Although possibilities exist here, the requirements in capital and "know-how" are tremendous and accomplishments in this field will take a long time.

In the tropical belt there are millions of acres which seemingly are suitable for growing cotton from the standpoint of soil and climate, but there are several very serious problems to be overcome: the sparse population, heavy insect infestations, and the difficulty of maintaining soil fertility. Further medical research will be required before the tropical diseases can be eradicated and these areas made habitable. Further agricultural research will be necessary to develop practical programs to control insects and to improve farming practices which will maintain the fertility of these soils.

In the less populous areas of the under-developed areas in the temperate

zones of South America and South Africa, the problems are just as insurmountable as those being faced in the tropical regions or the heavily populated areas of the world. Scarcity of farm workers as well as the scarcity of farm capital is aggravated by the movement on the part of individual governments to push ahead with industrial programs in an effort to achieve greater self-sufficiency. Then too, physical factors contribute to serious production problems.

With dim prospects for obtaining a sizeable expansion of cotton production in foreign countries in the near future, there is every likelihood the demand for U.S. cotton will continue fairly strong for some years to come. An annual demand for four to five million bales is not an unreasonable expectation. As the other cotton producing countries use more of their crop and export less, the demand for U.S. cotton might conceivably be greater if financing is available.

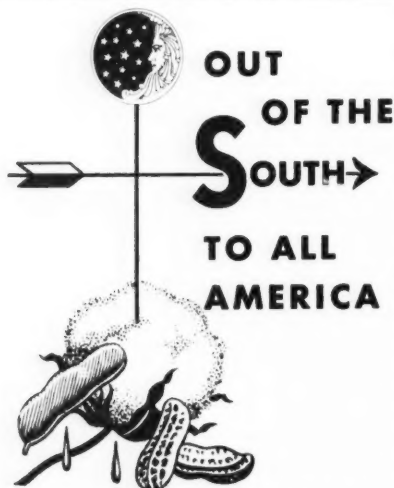
The ability of foreign customers to finance purchases of U.S. cotton is a vital consideration, the importance of which cannot be over-emphasized. Their purchasing power has two very significant aspects. In the first place, the availability of foreign exchange, particularly dollar exchange, is directly related to competition from synthetics. There is no question but what the shortage of dollar exchange and the inconvertibility of currency has greatly influenced the growth of synthetic fibers in the rest of the world as a self-sufficiency measure. The materials for producing synthetics are generally available in the respective countries or in non-dollar currencies. If other cottons are not available and they do not have dollars to buy U.S. cotton, they will be forced to expand the use of synthetics in the future.

Thus it is clear that if our prospective customers do not have dollars, they simply cannot buy our cotton. The level of foreign purchasing power will definitely determine the size of our cotton exports.

Of course, we all recognize that the rest of the world must get on a pay-as-you-go basis as soon as possible. The U.S. aid program has been greatly reduced. We are now financing only about eight percent of all U.S. exports with direct grants, whereas, only a few years ago it was nearer a third. We financed only about 15 percent of our cotton exports with grants last year against about two-thirds a few years ago.

In the main, purchasing power of foreign countries will depend on their own economic development. The level of production has risen at an unprecedented rate in Europe and Japan. But much of this production is inefficient and results in prices that will not permit these goods to move in international competition. The level of efficiency must be raised in order to increase wages and improve purchasing power. Raising purchasing power will require the employment of more capital, better management and the achievement of greater labor productivity. The spirit of competition should encourage efficiency. A better understanding of capital and its use, plus a recognition of the necessity of permitting capital development, is necessary. Security is also requisite, but in many cases, especially in Europe and Asia, security itself may depend on the level of production attained.

We have had a rash of new trade barriers in the past nine months in practically every country of the world. If these



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barriers continue to develop at this rate, the whole world will soon be reduced to a barter basis. Private trade as we have known it will die. The volume of trade will shrink to a fraction of its former size, and the standard of living of the world will be inescapably reduced.

We could cite 50 examples of how this affects cotton. The most glaring are the exorbitant duties or quotas being raised to keep cotton textiles out of countries trying to make their own cloth, as a result of their nationalistic fervor and their desire to become self-sufficient. The increase in textile prices resulting from trade restrictions tends to reduce the consumption of cotton textiles. Unmistakably, the misguided efforts in industrialization in many of these countries are tremendously expensive and at the present time are benefiting no one.

Another glaring example affecting cotton is the barter agreement. This arrangement is used to move products which are priced too high to move normally. The high prices are usually the result of inefficient production. In the end it is the consumers who suffer.

As far as we in the United States are concerned these are primarily foreign policy problems, but they inescapably involve business because the policies relate to production which is naturally a function of business.

They also involve domestic activity on a wide front. Regardless of how efficient our customers become or how much they produce, we in the United States must buy some of their goods and services or they will not have the means to buy our products in return.

U.S. purchases have been going up rapidly. Money value of our purchases is four times higher than before the war. By volume purchases are more than double. Some of these may be considered temporary, like the strategic materials for the mobilization program and the stockpile, but most are of a more normal and enduring character resulting from our higher rate of economic activity and reduced trade barriers.

Tariff duties imposed by the United States have been cut in half; and when the advance in price is considered, they are 75 percent below what they were in the high tariff period of the early thirties. Over half of our imports are on the free list. On another quarter they are nominal. Only a fourth is subject to substantial duties. In total, duties amount to the equivalent of about five percent of the value of our imports.

Protective tariffs still represent a problem but not nearly the problem they were a few years ago. However, if the United States extends its protection and goes further in the direction of isolationism, finding dollars to finance cotton exports will be extremely difficult.

Aside from the question of protection in the field of manufactured products, the tariff question is important in the field of natural resources. There are indications that the United States has gone a long way in mining itself out of many of its basic minerals. If the United States maintains a policy of no restrictions on the importation of strategic and vital minerals to conserve our last remaining supplies, this may result in an expansion of our total imports and increase the dollar earnings of the rest of the world.

We have pointed out that the market opportunities for the future are alluring. The extent to which we realize these markets will depend very greatly on

how effectively we meet our price and quality competition. We have pointed out the efforts to meet quality competition and how they have in some instances even been successful in overcoming a price disadvantage, but we know that price competition will be an enduring aspect that cannot be ignored.

In cotton as in all aspects of agriculture, competition for labor is becoming keener by the day. Whether minimum wages are extended to agriculture by law, the influence of industrial wages will certainly be felt. No one knows that better than you in California.

We all know that cotton farmers simply cannot pay industrial wages and still produce cotton at a price competitive with the other fibers unless the productivity of labor is increased. That is why we look to mechanization with such great hope.

So, while we feel cotton's market opportunities for the future are very bright, we know the extent to which these opportunities can be realized depends greatly on the advancement in mechanization.

Foreign Markets and Progress in Mechanization

The U.S. cotton industry cannot ignore the importance of foreign cotton outlets. Foreign markets for raw cotton play a major role in the achievement of efficiency in the production and distribution of cotton in the United States. The exportation of two out of every five bales of U.S. cotton makes it possible for the domestic cotton industry to produce at full capacity — and thus to achieve a balance in both the internal and external economies concomitant with the optimum scale of operations in a competitive economic system.

If U.S. cotton production were limited to the domestic market, annual production over a period of years through necessity would have to be curtailed to domestic consumption — a reduction of from 30 to 40 percent from prevailing levels. The stakes are too high to consider drastic curtailment of such magnitude. This would most probably result in the imposition of acreage allocations and marketing quotas on a per farm basis. Under such conditions many cotton farmers could not employ efficiently or economically modern machinery complements — tractors and multiple-row middle busters, planters, cultivators, flame cultivators, eight-row dusters and sprayers, mechanical cotton pickers and the like. The initial cost of mechanizing cotton production is great. Unless the cotton enterprise on individual farms is large enough to permit full and efficient use of modern machinery complements representing these large capital outlays, the economic advantage of mechanization will be seriously impaired.

Excessive overhead costs resulting from failure to obtain full and efficient use of high-cost specialized machinery could very well eat up the anticipated profits of many producers and impair the competitive position of U.S. cotton. These costs must be spread over more bales. Foreign markets provide the opportunity for achieving the volume that will enable production to be spread over more bales. They also provide the opportunity of achieving the volume that will avoid the accumulation of burdensome surpluses which will bring on the controls and restrictions everyone would like to escape.

1951 Farm Real Estate Tax Levies Increase

Taxes levied on farm real estate by state and local governments increased again in 1951, most of them payable in 1952. This is the seventh increase since the end of World War II, and brought farm real estate taxes to a record peak. In 1951 levies totaled about \$775,000,000 compared with \$735,000,000 in 1950 and \$699,000,000 in 1949. Prior to that time they fluctuated around \$400,000,000.



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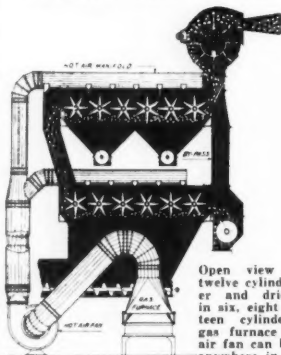
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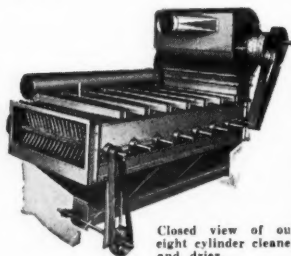
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E. P. KIDD, Birmingham, Ala., is a native of Alabama, having been born in 1882 in Shelby County where he was educated in private and public schools. His early employment was with the Tennessee Coal, Iron and Railway Co. and Southern Railway, but after taking a course in business administration, he entered the cotton oil industry in 1905 as bookkeeper-auditor for the Birmingham Oil Co.

He has remained continuously in the industry since then, having served as manager, Ozark Oil Co., Ozark, Ala., manager and part owner, Enterprise Cotton Oil Co., Enterprise, and manager, The Buckeye Cotton Oil Co., Birmingham. Since 1917, he has been with the Farmers and Ginners Cotton Oil Co., Birmingham, of which he is a director and vice-president.

Kidd is a deacon in the Southside Baptist Church, director and past president, Birmingham Lions Club, director, Boys Club, director, Five Points YMCA, chairman, cottonseed and products committee, Southeast Shippers Advisory Board, and member of the executive committee and past president, Alabama-Florida Cottonseed Products Association.

He married Mildred Elizabeth Darby in 1924. They have no children. Fishing and football are his favorite sports.

Gonzales County First in Texas Feed Purchases

Gonzales County led all other Texas counties in value of feeds purchased, according to preliminary 1950 figures of the U.S. Census Bureau. Gonzales also was the state's leading broiler producing county, and the county Census figures reflect the importance of the poultry industry as a feed market through the close relationship between the rank of counties in poultry production and feed purchases.

Feed purchases reported for Gonzales totaled \$6,220,514. Other leading Texas counties and values of feed purchased included Harris, \$4,841,057; Tarrant, \$3,481,665; Bexar, \$3,223,504; and McLennan, \$2,446,003.



A large percentage of today's cotton crop is handled from the plant to the cotton gin and thence to the finished bale without ever having been touched by human hands.

This requires the present-day cotton ginner to stay abreast of the times with new gin machinery, cleaning and drying equipment, more power, and all the other necessary auxiliary equipment.

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The Ace Co.

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Arizona Mechanization Costs

(Continued from Page 67)

Cotton growers in Arizona are definitely water-conscious, and will become increasingly so. The matter of water conservation is being practiced on many of our irrigated farms. This is being done by installing underground concrete pipelines, cement lining of ditches, the building of collecting pumps with tail-water pumps to return waste water for re-use. Again, I stress that these items represent more investment, which means depreciation expense, and any proper method of accounting must record them in compiling the cost factors of growing cotton.

Planning for Mechanical Cotton Production

Cotton farmers in Arizona, as in other parts of the irrigated West, have found that planning for mechanical cotton production starts even before the pre-irrigation takes place. I will name some of the more important operations as they occur.

1. First of all, it is a great help in developing an even growth of plant to have the land levelled to a uniform slope. Assuming a fairly uniform soil type, evenness of slope develops evenness of growth. This is a great advantage at harvest time when picking mechanically.

2. When furrowing out for pre-irrigation, the land is bedded up in 38-inch rows, pre-irrigated with about 1½ acre feet of water per acre, then scratched or lightly knifed to kill small weeds, and at the same time the seed is prepared for planting on the ridge.

3. The land is then planted with a type of cotton suitable for machine harvesting. This should be a cotton that stands up well, is not too leafy, and cotton that comes out of the lock fairly easy.

4. Planting can be done with a precision planter and left unthinned, or cotton can be planted thicker and thinned with a mechanical chopper. Close spacing is desirable in that it appears to increase the height of the bottom bolls from the ground, thereby providing greater recovery when harvesting mechanically.

5. Continuous cultivation is practiced, plus some hand-hoeing to control weed growth until height of cotton prohibits further operation. Weed-control, after cultivation stops, must be done by hand. When anticipating a mechanical harvesting operation, it is essential that weeds be at a minimum.

6. Cleaning facilities to handle machine-picked cotton are rapidly being installed by the ginning industry in Arizona. Additional gins are also being built to handle the faster rate of picking brought about by the increased use of mechanical pickers.

In addition to planting the cultural aspects of a mechanized cotton operation, financial planning has become exceedingly important. Especially is this true in the West, where the yields are high but production costs and investment in machinery are unprecedented. To obtain these high yields, the irrigated cotton farmer needs to borrow a lot of production money. I say borrow, because I have yet to meet a cotton farmer who did not have to borrow money. All of our

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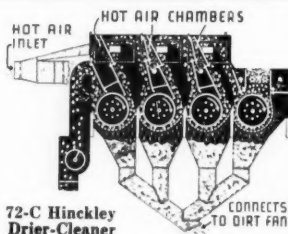
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Western soils are deficient in nitrogen and some need phosphate and potash and annually require liberal amounts, particularly of nitrogen. Properly timed insect control is essential. Our land is in a semi-arid terrain. It is hot all summer and dry the year around, except for a few summer thundershowers that only promote weed growth and create a hail hazard. Our soils are on the alkaline side. Our winter temperatures are not sufficiently low to cause cracking and aeration of the soil. Deep plowing each year, therefore, is essential. This means use of big crawler-type tractors and heavy tillage tools, all expensive equipment. This adds to our cost and greatly increases our investment requirements. Because of the need for these large sums of money, a real opportunity and demand for farm financing has and does exist in Arizona. I can wholeheartedly

say that this demand has been admirably met by the cotton companies and the banks of both Arizona and California. Our high costs may result in a diminishing rate of return per unit, but my figures show a greater return per dollar of investment by continually striving for the high yield, with costs, whatever they are, being at the moment of secondary importance. This is a daring type of operation in which the requirements for cash are alarmingly great. In the event of price recession, a farmer out here can run out of cash in a hurry. He can go broke in a hurry unless sound, quick decisions are made. Being aware of these things is the best assurance that we Westerners will be in the cotton business for a long time to come.

Cost Factors at the Continental Farm

Some time last July, after I had been

asked to make a talk at this Conference, I had a letter from Harold Young outlining the nature of my assignment. I am afraid I have wandered far astray from what he had in mind, though I told him in a later letter in a general way what I intended to say here today. One thing Harold said was that he hoped I would let my hair down about our own operation with respect to costs.

Early in my talk today, I stressed what I think has been a great shortcoming on the part of American agriculture as a whole—the importance of telling the story of increasing costs of production on the farm. I have tried to let this train of thought run through the entire body of what I have had to say here today. With the housewife talking about the high cost of food and clothing, people are all too inclined to think the farmer is too prosperous, and we have let them get away with it—and why is this? Personally, I am inclined to guess that all too many farmers don't know their costs. The postponable items such as depreciation, maintenance of tools and equipment, building repair, insurance premiums, even interest on borrowed money, all too often don't get into the budget. In the operation of Farmers Investment Co., these items are all accounted for, and we know where we stand at all times. Our costs are high, but I must bring out, though I do it with utmost humility, that our yields have also been substantially above the average of those in Arizona. In any event, here are the figures for the Continental farm, based on an average of the two crop years, 1950 and 1951. (See table at left.)

Conclusion

I think I have now completed my assignment, "Operational Costs of Mechanical Cotton Production in Arizona." I have given you the details of what it costs to grow cotton on at least one fairly large Arizona cotton farm.

In conclusion I would like to re-emphasize to you cotton growers here today the points which mean so much to the future of our business, and, I think, the future of America.

Let's not boast how profitable the cotton business is, without first being sure to include all the costs to do the job. We, as farmers, have a real responsibility to the future. Let's stop mining the land. Let's follow sound practices in order to maintain the agricultural plant. Let's follow a well-planned rotation program, and, here in the West, a water conservation program. Having done these things we can, with a clear conscience, tell the people who consume farm products—and that's everybody—about the problems on the farm. Let's tell them the real story about farm costs; and then perhaps we will hear more people say, as one of my metropolitan friends said to me, "Isn't the American Farmer doing a wonderful job?"

Sea Island Egyptian Cross Shows Promise in Georgia

Crosses of Egyptian and Sea Island cotton show promise in research at the Georgia Coastal Plain Experiment Station, Tifton, according to the 1951 annual report of the University of Georgia Experiment Stations. A small planting to increase the seed of better lines is being maintained at Tifton and seed from this planting is being increased in Cook County under isolated conditions.

Continental Ranch Costs 1950 and 1951 Seasons 3,162 Acres—6,961 Bales—2.2 Bales Per Acre (Short staple basis, Pima yield converted to short staple by multiplying bales of Pima by 2½)			
GROWING COSTS			
Direct Charges			
Labor			
Preparation	4.60	2.10	.0042
Irrigation	17.33	7.87	.0160
Cultivation	1.95	.89	.0010
Chopping and Weeding	17.46	7.91	.0163
Fertilizer Application .....	.61	.28	.0006
Pest Control .....	.28	.13	.0003
Total Direct Labor	42.23	19.18	.0384
Expense (Material and Supplies Used)			
Power—Irrigation	20.51	9.31	.0186
Fertilizer	18.35	8.34	.0167
Supplies and Seed	1.42	.65	.0012
Insurance—Hail	3.46	1.66	.0033
Pest Control—Material and application	13.91	6.33	.0125
Total Direct Expense	57.65	26.19	.0624
Indirect Charges			
Ranch Overhead Labor			
Supervision; tool and equipment, mechanics and blacksmiths; tractor and truck servicing; weeding ditches; building repair; irrigation system upkeep and repair; miscellaneous labor; employees' bonuses, exclusive of supervision	8.48	3.85	.0080
Ranch Overhead Expense			
Domestic utilities; pump plant upkeep; irrigation supplies, hoses, tarps, boots, lanterns; material used for weeding ditches; tool and equipment upkeep, parts; truck and tractor operation and repair parts; material for building repairs; real estate taxes; insurance; miscellaneous supplies and expenses	23.59	10.72	.0212
General Administrative Overhead			
Manager's salary (exclusive of bonuses); office and clerical salaries; office supplies; phone, rent and utilities; travel expenses; insurance; interest on borrowed operating capital; legal and auditing; depreciation on office equipment and other overhead equipment used; miscellaneous operating overhead	6.60	3.00	.0060
Total Cash Growing Costs	38.67	17.57	.0352
Depreciation on buildings, tool and equipment, truck tractor, pipelines, wells	138.55	62.94	.1260
Interest on Investment at 6%	30.65	13.92	.0277
Interest on Investment at 6%	4.52	2.05	.0041
TOTAL GROWING COSTS	173.72	78.91	.1578
Breakdown of Hand and Machine Picking Costs			
Machine Picked: 2,620 Bales—37.6% (1,190 acres)			
Labor—Operation and Maintenance	10.61	4.82	.0096
General Labor (hauling trailers)	1.51	.68	.0014
Picker Operation and Repair	14.94	6.78	.0136
Defoliant	3.82	1.75	.0035
Tool and Equipment (trailers)	1.24	.56	.0011
Miscellaneous .....	.12	.05	.0001
Total Direct Costs	32.24	14.64	.0293
Overhead, Depreciation	8.93	4.06	.0081
Total Cost Machine Picked Cotton	41.17	18.70	.0374
Hand Picked: 4,341 Bales—62.4% (1,972 acres)			
Labor	102.95	46.78	.0935
General Labor (hauling trailers)	1.51	.68	.0015
Supplies (sacks, scales, etc.)	8.8	.39	.0008
Tool and Equipment (trailers)	1.24	.56	.0010
Miscellaneous .....	.13	.05	.0001
Total Direct Costs	106.71	48.47	.0969
Overhead (contract labor, insurance, etc.)	8.94	4.08	.0082
Total Cost Hand Picked Cotton	115.65	52.55	.1051
Total Average Harvest Cost on all Cotton	87.62	39.80	.0796
Summary			
	Cost per Lb.		
Growing and Harvesting Costs .....	.1951		
Machine Picked Cotton .....	.2630		
Hand Picked Cotton .....	.2374		
Average of all Cotton Produced			

CALENDAR

Conventions • Meetings • Events

• Dec. 4-5—Second Annual Weed Control Conference. Claridge Hotel, Memphis, Tenn. Attendance limited to representatives of public and private agencies in weed control work. For information write: National Cotton Council, P. O. Box 18, Memphis.

• December 10-11—Sixth Annual Cotton Insect Control Conference. Hotel Peabody, Memphis, Tenn. For information write: National Cotton Council, P. O. Box 18, Memphis.

1953

• Jan. 15-16—1953 Beltwide Defoliation Conference. Hotel Peabody, Memphis, Tenn. For information write: National Cotton Council, P. O. Box 18, Memphis.

• Jan. 26-27-28—National Cotton Council of America, fifteenth annual meeting. Dallas, Texas, Wm. Rhea Blake, P. O. Box 18, Memphis 1, Tenn., executive vice-president-secretary.

• March 3-4—Oklahoma Cotton Ginners' Association annual convention. Skirvin Tower Hotel, Oklahoma City, Okla. J. D. Fleming, 1004 Cravens Bldg., secretary.

• March 23-24-25 — Arkansas-Missouri Ginners Association annual convention. Midsouth Fairgrounds, Memphis, Tenn. W. Kemper Bruton, Blytheville, Ark., executive vice-president. To be held concurrently with Midsouth Gin Supply Exhibit.

• March 23-24-25—Midsouth Gin Supply Exhibit. Midsouth Fairgrounds, Memphis, Tenn. For information, write W. Kemper Bruton, executive vice-president, Arkansas-Missouri Ginners Association, Blytheville, Ark. Arkansas-Missouri and Tennessee ginners' associations will hold annual conventions in connection with the Exhibit.

• March 23 - 24 - 25 — Tennessee Cotton Ginners Association annual convention. Midsouth Fairgrounds, Memphis, Tenn. W. T. Pigott, P. O. Box 226, Milan, Tenn., secretary-treasurer. To be held concurrently with Midsouth Gin Supply Exhibit.

• April 6-7-8 — Texas Cotton Ginners' Association annual convention. State Fair Grounds, Dallas, Texas. Jay C. Stille, 109 N. Second Ave., Dallas, Texas, executive vice-president.

• April 13-14—Valley Oilseed Processors Association annual convention. Buena Vista Hotel, Biloxi, Miss. C. E. Garner, 1024 Exchange Bldg., Memphis, Tenn., secretary.

• April 20 - 25 — 1953 Gin Operators Schools for Arkansas and Missouri ginners. Memphis, Tenn. April 20-21, Continental School. April 22-23, Murray School. April 24-25, Lummus School. April 27-28, Hardwicke-Etter School. Additional dates to be announced later. For information write: W. Kemper Bruton, executive vice - president, Arkansas - Missouri Cotton Ginners' Assn., Blytheville, Ark.

• May 8-12—National Cottonseed Products Association, fifty-seventh annual convention. Ambassador Hotel, Los Angeles, Calif. S. M. Harmon, 731 Sterick Bldg., Memphis, secretary-treasurer.

• May 4-16 — Texas Gin Operators Schools, Dallas. For additional information, write Ed Bush, Extension Cotton Ginning Specialist, Texas A. & M. College, College Station.

• May 18 - 19 — Oklahoma Cottonseed Crushers' Association annual convention. Lake Murray Lodge, Ardmore, Okla. J. D. Fleming, 1004 Cravens Bldg., Oklahoma City, Okla., secretary.

• June 1-2—Alabama-Florida Cottonseed Products Association-Georgia Cottonseed Crushers Association joint annual convention. Edgewater Gulf Hotel, Edgewater Park, Miss. J. E. Moses, 318 Grand Theatre Bldg., Atlanta, Ga., secretary. Georgia association; T. R. Cain, 322 Professional Center Bldg., Montgomery, Ala., executive secretary, Alabama-Florida association.

• June 3-4-5—Tri-States Oil Mill Superintendents' Association, twenty-eighth annual convention. Peabody Hotel, Memphis, Tenn. L. E. Roberts, DeSoto Oil Company, Memphis, secretary-treasurer.

• June 7-9—Texas Cottonseed Crushers' Association fifty-ninth annual convention. Shamrock Hotel, Houston, Texas. Jack Whetstone, 624 Wilson Bldg., Dallas 1, Texas, secretary.

• June 8-9 — North Carolina Cottonseed Crushers Association - South Carolina Cottonseed Crushers' Association joint annual convention. The Grove Park Inn, Asheville, N. C. Mrs. M. U. Hogue, P. O. Box 747, Raleigh, N. C., secretary-treasurer, North Carolina association; Mrs. Durrett L. Williams, 609 Palmetto Bldg., Columbia, S. C., secretary-treasurer, South Carolina association.

• June 10-11-12—Mississippi Cottonseed Crushers Association forty-fourth annual convention. Edgewater Gulf Hotel, Edgewater Park, Miss. J. A. Rogers, P. O. Box 3581, West Jackson Station, Jackson 7, Miss., secretary.

7


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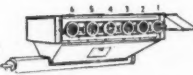

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Ground Peanut Hulls and Prairie Hay Compared

Fattening steers fed on finely ground peanut hulls were lower in carcass grades and had a lower dressing percentage than steers fed prairie hay in two tests at Texas Experiment Substation No. 18, Prairie View. Market weights, however, were higher for the lots fed the peanut hulls.

On the basis of the test in 1950-51, and comparative weights and dressed yield, with peanut hulls selling at \$15 a ton, prairie hay would have to sell at \$30 per ton for the two roughages to be evenly priced, the Station reported. Details of the experiment are contained in Progress Report 1483, available from Texas Experiment Station, College Station.

Presenting

Walter Craft

Carlsbad, N. M.



WALTER CRAFT, Carlsbad, N. M., was born on a farm near Lowell, Ind., Aug 5, 1885. After studying accounting in Chicago, he moved to Carlsbad in 1908 and purchased a farm. He was manager of a mercantile establishment for a number of years, and in 1920 became manager of The Otis Gin and Warehouse Co. which then operated two gins in the area. He has been in the gin business continuously since that time, and now operates three gins, the Gilbert Gin Co. and Otis Farmers Gin Co. at Carlsbad and Black River Gin Co. at Malaga, N. M. In 1922 he organized and helped build the Otis Gin and Wholesale Co. oil mill at Loving, which now is the Pecos Valley Cotton Oil Co.

He has served on the Carlsbad Board of Education for over 30 years and for about 18 years on the County Board of Education, having been president of both boards most of the time. A 21-room school in Carlsbad has been named for him, as has a street. Craft is a veteran of World War I, an Elk and a member of the chamber of commerce; and has served as second vice-president of the National Cotton Ginners' Association and an advisory director of the Texas Cotton Ginners' Association. He has one son and one daughter.

Thick Spacing of Plants Is Best for Strippers

Cotton stripper efficiency was higher when plants were spaced closely in experiments done for a master's thesis at Texas Technological College by Levon L. Ray, assistant agronomist at the Lubbock Experiment Substation.

"We found losses in harvesting are less when cotton stalks are three inches apart than when they are 13 inches apart," he said. "In the lower cotton stalk population the losses are 76 percent higher and 83 percent more stems are found in the harvested cotton."

Ray says the heavier planting rates, one bushel or more per acre, should be used where harvesting is to be done with the mechanical stripper.

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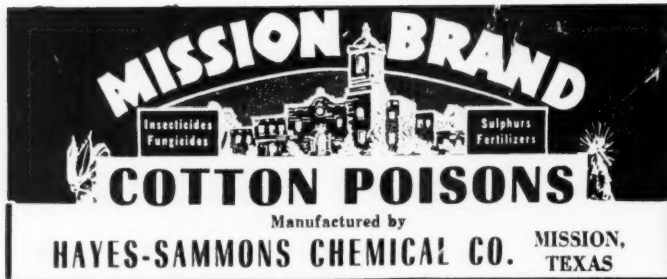
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• Corn Cobs Become More Useful to Industry

CORN COBS are increasing in commercial demand and value as a result of USDA research. The research is summarized in a bulletin, AIC 336, which may be obtained from the Northern Regional Research Laboratory, Peoria, Ill.

New methods and new markets developed for ground corn cobs have resulted in the expansion of the cob processing industry from one plant in 1939 to more than two dozen plants today, says Dr. G. E. Hilbert, chief, USDA Bureau of Agricultural and Industrial Chemistry. Tonnage of cobs processed is expected to reach 600,000 tons this year, compared with 5,000 tons in 1939.

The largest industrial use for corn cobs is in making furfural. Two-thirds of the cobs used in 1952 will be consumed in the preparation of this oily, straw-colored liquid, valuable in defense and other industries for the refining of vegetable and petroleum oils, and the production of synthetic rubber, nylon, synthetic resins, and medicinals.

Processing of corn cobs was stimulated during World War II by the demand for furfural for synthetic rubber, the demand for materials to burnish and polish cartridge cases, and the need for soft grits for cleaning airplane engines. Forty to fifty operators in Indiana and Illinois were collecting and shipping cobs to furfural plants.

The metal stamping and electroplating industries are the next largest consumers of cob products, which many find superior to the hardwood sawdust previously used in those fields. Ground cobs are being used satisfactorily to remove rough spots and dirt and to polish metal stampings, and to absorb residual plating solutions from electroplated parts and to polish them.

Soft grits from corn cobs used in an air blast method have proved the most inexpensive, efficient, and safest material for cleaning airplane and automobile engines and parts, precision apparatus, and large electric motors and generators, according to laboratory scientists. Cob grits are also used in removing "flash" (rough edge left after molding) from molded plastics, metal die castings, and similar items.

After continued intensive research by the Peoria laboratory, there is today increasing public interest in the corn cob and its applications. Civilian uses in both industry and agriculture have continued to expand. In addition to that used by manufacturing industries, more than 100,000 tons are being used each year as livestock bedding and poultry litter.

Gardeners and nurserymen have found ground cobs satisfactory as a mulch for roses, carnations, strawberries, cucumbers, trees, and shrubs. The use of cobs combined with blackstrap molasses and other nutrients as an economical feed for beef cattle is expanding rapidly. Cob meal is rapidly replacing corn meal as a mild abrasive in hand soaps, and fine cob flour is being used in the production of insecticides.

• Georgia leads the nation in naval stores (turpentine and resin) production, says Georgia Extension Service. Since 1940 Georgia has produced more than 60 percent of the nation's total supply and almost half the world supply.

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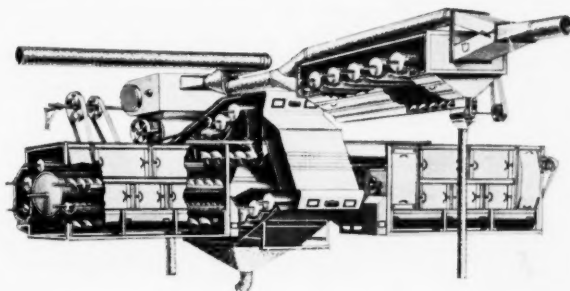
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